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Infantry Training

Volume I

INFANTRY PLATOON WEAPONS
PAMPHLET No. 6

LIGHT MACHINE GUN
and SECTION HANDLING
(All Arms)
1968

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The Chief of the General Staff*

MINISTRY OF DEFENCE,
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ABBREVIATIONS

AA	Anti-aircraft
DF	Defensive fire
DP	Drill purpose (to describe a gun used for instruction only, not for firing)
IA	...	...	Immediate action
LMG	...	...	Light machine gun
MPI	...	...	Mean point of impact
SMG	...	...	Sub-machine gun (supersedes "sub-machine carbine")

FILMS

These films are useful training aids:—

	FILMS'	No.
Automatic weapons—general principles of mechanism	B 851	
Common stoppages in automatic weapons	B 852	
Bren .303-inch LMG mechanism	B 853	

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INFANTRY TRAINING

Volume I

INFANTRY PLATOON WEAPONS

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INTRODUCTION

The aim of weapon training

1. The aim of all weapon training is to produce soldiers who can kill in battle with any platoon weapon.

Achievement of the aim

2. To achieve this aim, men must reach a high standard of marksmanship, servicing and fieldcraft with all weapons, and they must be able to work together as teams under good junior leaders.

Aim of this pamphlet

3. This pamphlet contains the material that an instructor needs to teach recruits how to handle and fire the LMG, and how to work as members of a section team.

Layout

4. The pamphlet is in two chapters:—

- (a) Chapter 1 contains: (i) lessons, which teach recruits all they need to know; (ii) instructions for practice periods, which drive home the skills and techniques; and (iii), most important of all, instructions for live firing periods.
- (b) Chapter 2 contains more information to help instructors to understand the subject and its presentation better; and tests, which show what standard men have reached.

5. Throughout Chapter 1 two forms of printing are used:—

- (a) Portions in ordinary type are notes for instructors.
- (b) Portions in *italics* are what instructors should teach recruits.

Method of instruction

6. How an instructor teaches a lesson is left to him. It is better to let inexperienced instructors have prepared lesson plans, and refer to them during lessons, than to accept wrong or muddled teaching.

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7. All instructors should study Successful Instruction, 1951 (Army Code No. 8670).

8. As soon as a recruit has learned to aim his rifle, you can begin to teach him the LMG. Thereafter rifle, LMG and fieldcraft training can go on side by side.

9. The more guns available, the more successful training will be; in most cases the ideal is to have enough guns for everyone in the squad, but the best number to have depends on your skill and experience as an instructor.

CHAPTER 1.—INSTRUCTIONAL



Fig. 1.—The Bren light machine gun

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LESSON 1.—STRIPPING, CLEANING AND ASSEMBLING

AIM

1. To introduce recruits to the gun, and to teach them to strip it, clean it, and put it together again.

STORES

2. Guns, magazines, holdalls, wallets, drill cartridges, utility pouches, and cleaning materials.

NOTES

3. The gun is simple to teach, so keep your teaching simple.

4. Name parts as you handle them, but do not waste time trying to get the men to learn the names; they soon get to know them as they strip and clean the gun in later lessons and in the normal course of training.

5. Stripping causes wear; too much of it leads to breakdowns. Use drill purpose (DP) guns for instruction if you have them, and only strip service guns to clean and inspect them.

PRELIMINARIES

6. Put a set of utility pouches, magazines and spare parts wallet on the right of each gun.

SAFETY PRECAUTIONS

7. Explain and demonstrate.—*You must always carry out these safety precautions before and after you use a LMG for any purpose:—*

(a) See that there is not a magazine on the gun; open the magazine and ejection opening covers; pull the cocking handle back as far as it will go and push it forward again (this is known as cocking the gun); make sure there is no round or obstruction in the body of the gun or in the chamber; press the trigger, and close the covers.

(b) Inspect all magazines, pouches and drill cartridges to make certain that there are no live rounds in them.

APPROACH

8. The Bren is one of the best light machine guns in the world, and has stood the test of battle. It can fire single rounds or bursts; and you can fire it up to 600 yards/metres on its bipod, and considerably farther on its tripod.

9. You can set the change lever at "S" (safe), "A" (automatic) to fire bursts, or "R" (rounds) to fire single rounds.

10. The gun is fed by a magazine, which holds 28 rounds.

11. Explain and demonstrate paras 12–17.

12. You cannot clean and service the gun without stripping it and putting it together again.

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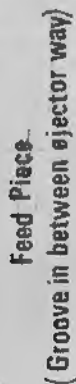


Fig. 2.—The piston group

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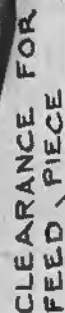


Fig. 3.—The barrel group

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13. The piston group (see Fig 2).—To strip it:—

- (a) Cock the gun, make sure there is no round in the breech or chamber, press the trigger, and close the magazine opening cover.
- (b) Push out the body locking pin, and pull the butt back until the return spring rod is clear of the body. Hold the rod to the left, pull back the cocking handle sharply, and push it forward again; if that fails to draw back the piston, put your fingers under the gun and pull it back that way. Take out the piston and breech block.
- (c) Pull back the breech block, and lift it off the piston.

14. The barrel group (see Fig 3).—To strip it:—

- (a) Tilt the gun to the right; press in the barrel nut catch, and lift the barrel nut as high as it will go; raise the carrying handle; push the barrel forward, and take it off. Be careful not to damage the breech end of the barrel.
- (b) Push the gas regulator retaining pin flush with its housing; turn the regulator with the nose of a round or with the combination tool, and take it out.

15. The butt group (see Fig 4).—To strip it, raise the barrel nut (Mark 1 guns only), and pull it away from the rest of the gun.

16. The body and bipod groups (see Fig 5).—To take the body and bipod apart, hold the bipod: turn the body to the left, and pull it out of the bipod sleeve.

17. That is all the stripping you need to do for daily routine cleaning.

ASSEMBLING

18. Explain and demonstrate.—To put the gun together, reverse the process of stripping exactly, but:—

- (a) Remember to press down the barrel nut when you have put the barrel on.
- (b) See that the body locking pin is right out before you try to put in the piston.
- (c) See that the breech block is inside the body before you push the butt forward.
- (d) There are four gas ports in the regulator, and there is a mark opposite each of them on the left hand side of the regulator; the smallest mark is opposite the smallest hole and is called No. 1 and so on; there is a zero mark on the gas block. Always set the regulator with the smallest mark that makes the gun work reliably opposite the zero mark; it is usually No. 2.
- (e) When you have finished, cock the gun and press the trigger to make sure it is working, and then close both covers. The trigger has only one pressure, but there is a bit of slack to take up before the proper pressure starts. There is more slack when the change lever is a "R" than when it is at "A".

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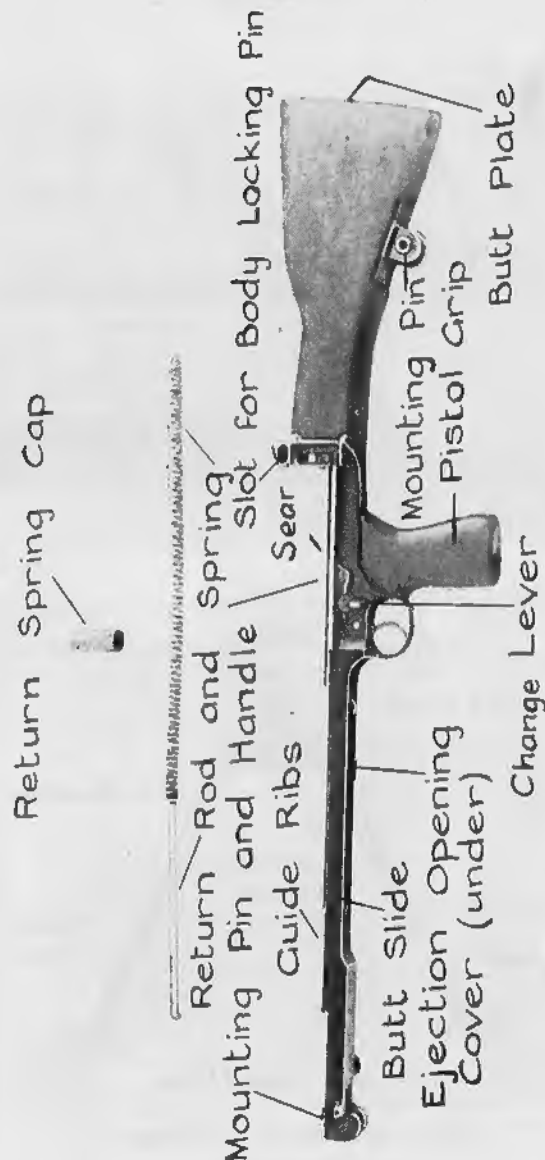


Fig. 4.—The butt group

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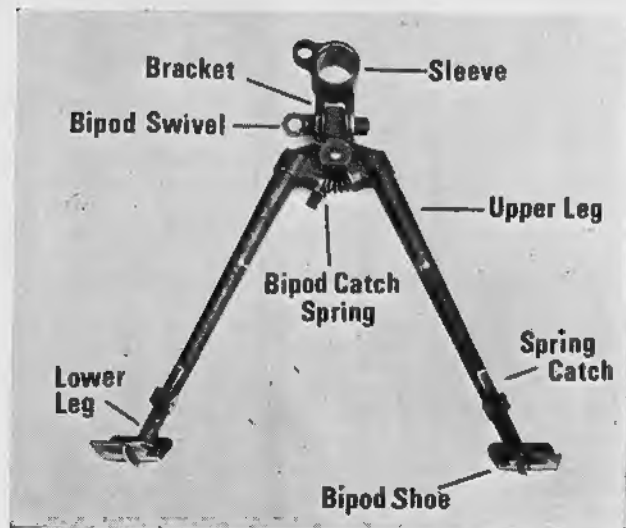
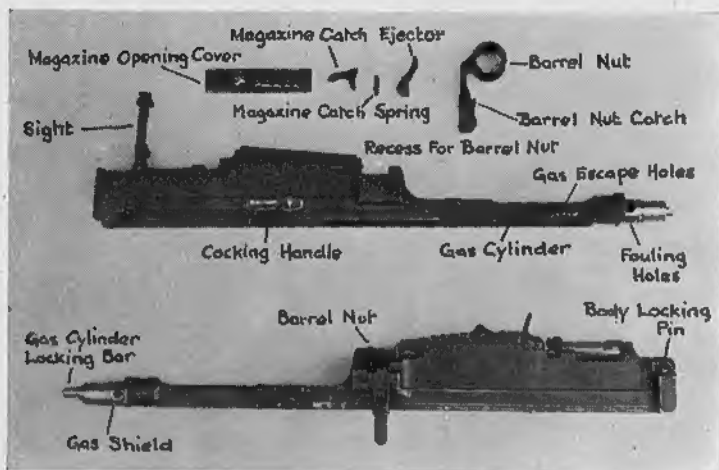


Fig 5.—The body and bipod groups

(f) Never move the change lever from "S" to "A" while the trigger is pressed, or the gun will not fire. The remedy is to take your finger off the trigger, and move the change lever to "S", and then back again to "A".

NOTE. When assembling, ensure that the number on the side of the breech block, rear end of the piston, and on the barrels corresponds to the number on the body.

OTHER WAYS OF STRIPPING

19. Explain and demonstrate:—

- (a) You normally strip the gun as you have just learnt, but it is possible to strip:—
 - (i) The barrel, without taking out the piston group.
 - (ii) The butt group, without stripping the piston or barrel groups.
 - (iii) The bipod, without stripping anything else except the barrel.
 - (iv) The breech block, without taking out the piston.
- (b) When you take off the barrel only, leave the gun cocked, and tilt it to the right, and see that the magazine opening cover is closed.
- (c) When you strip only the butt group or the bipod group, or only take out the breech block, carry out the safety precautions before you start stripping.

20. Practise stripping and assembling, finishing with the guns stripped.

THE HOLDALL AND WALLET (Fig 6).

21. Explain and demonstrate but do not try to make your men remember the details at this stage:—

- (a) Each gun has a holdall, which contains:—
 - (i) Inside —Second barrel, cylinder cleaning rod and chamber cleaning stick.
 - (ii) Outside—Top left —Mop, wire brush, tool for getting fouling out of the front of the cylinder, magazine cleaning brush.
 - Top centre—Single pullthrough.
 - Top right —Oil bottle for graphited grease.
 - Centre —Spare parts wallet.
 - Bottom —Oil can for oil, ~~LOW TEM. OIL~~.
- (b) The wallet contains:—
 - Top left —Combination tool.
 - Centre —Oil can full of rifle oil.
 - Top right —Double pullthrough and flannelette.
 - Bottom —Spare parts tin.
- (c) If a section has not got its holdall with it:—
 - (i) In hot or dusty weather the oil bottle of graphited grease goes in the spare parts tin instead of outside the holdall.
 - (ii) In ~~very cold~~ ^{hot} climates the two oil cans change places.

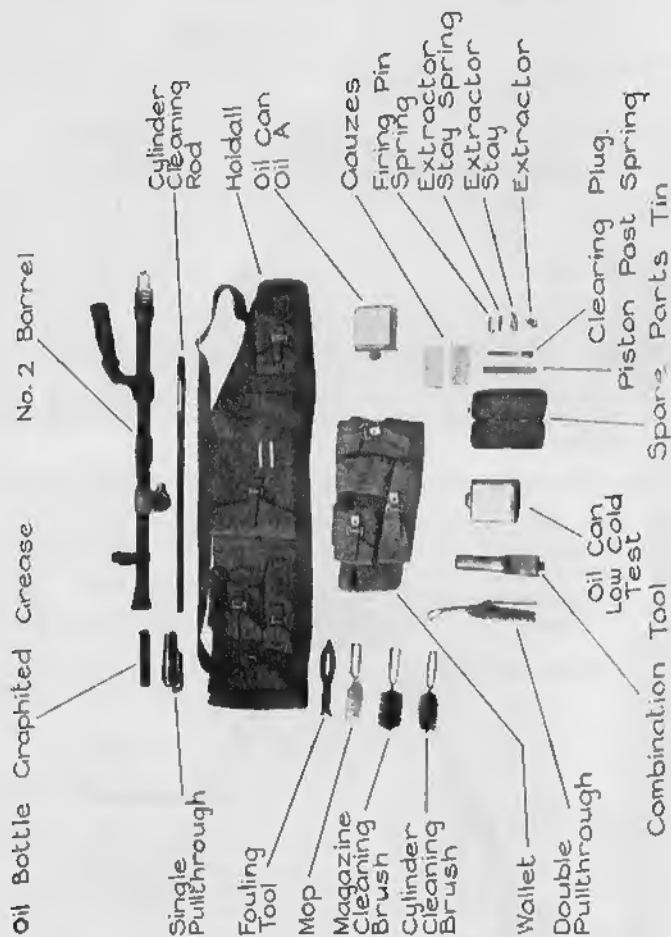


Fig 6.—The holdall and wallet, and what goes in them

THE HOLDALL AND WALLET—7.62-mm CONVERTED BREN

21A. Explain and demonstrate:—

(a) Each 7.62-mm gun has a holdall which contains:—

- (i) Inside —Second barrel and cylinder cleaning rod.
- (ii) Outside—Top left —Tool for getting fouling out of the front end of cylinder.

Top centre—Brush for cleaning LMG cylinder.

Top right —Container for graphited grease when not carried in wallet.

Centre —Spare parts wallet, filled.

Bottom —Oil can for ~~low cold test oil~~ ^{HIGH TEMPERATURE OIL}.

(b) The wallet contains:—

Top left —Combination tool.

Centre —Oil can for rifle oil.

Top right —Flannelette and graphited grease (if carried).

Bottom —Spare parts tin.

Inside flap—Jointed cleaning rod (five sections).

(c) Contents of spare parts tin:—

For LMG.

Extractor.

Extractor stay.

Extractor stay spring.

Firing pin spring.

Clearing plug.

Brush cleaning, chamber and rifle cylinder.

Brush cleaning, barrel.

For SL Rifle.

Extractor.

Extractor spring.

Extractor plunger.

Firing pin.

Gas plug.

(d) If a section has not got its holdall with it:—

(i) In hot or dusty climates the container of graphited grease goes in the spare parts tin.

(ii) In ^{HIGH} cold climates the two oil bottles change places.

DAILY CLEANING

22. Explain and demonstrate.—This is how you clean the gun every day:—

(a) Use the single pullthrough and breech stick, and clean and oil both barrels like a rifle.

(b) Put the mop on the cylinder cleaning rod, cover it with a piece of flannelette four inches square, and clean the cylinder with it; to oil the cylinder, use a piece of flannelette the same size on the single pullthrough.

(c) Clean the rest of the gun and magazines with an oily rag.

(d) Put the gun together again. Remember to cock it, press the trigger to see that it works, and close the covers.

(e) Under ordinary or arctic conditions, normal issued oil is to be used. For tropical temperatures a special oil is issued.

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22A. Explain and demonstrate.—*This is how you clean the 7-62-mm Converted Bren every day:—*

- (a) *Using the cleaning rod and flannelette size 4 × 1½ inches, clean both barrels. Attach the chamber cleaning brush to the rod and clean the chamber. Inspect and oil using the same sized flannelette.*
- (b) *Using the rod and the chamber cleaning brush with a piece of flannelette 4 × 4 inches wrapped round it, or a piece of flannelette 4 × 4 inches on the rod, clean, inspect and oil the cylinder using the same sized flannelette.*
- (c) *Clean the rest of the gun as shown in para 22(c) and (d) above.*

SEE ALSO PARA 22E.

CONCLUSION

23. Questions from and to the squad.
24. Sum up; remind the men that they should only strip service guns to clean them.

LESSON 2.—MAGAZINE FILLING, LOADING, SIGHTSETTING, UNLOADING AND MAKING SAFE

AIM

1. To teach recruits how to fill magazines, set the sights, load, unload and make safe.

STORES

2. Guns, one magazine per man and instructor, wallets, drill cartridges and utility pouches.

NOTES

3. If you are using drill cartridges, you must clear the gun before closing the ejection opening cover; otherwise a round stays in the ejection slot, and, when you load again and fire, it is forced into the wall at the front of the slide, the ejection opening cover jams, and only an armourer can clear the gun.

4. This lesson describes both leaf and drum backsights; teach recruits only the type on their guns.

PRELIMINARIES

5. Put a set of utility pouches on the right of each gun, and carry out the safety precautions.

MAGAZINE FILLING

6. Explain and demonstrate; make the men copy your actions:—

(a) *Magazines and ammunition must be clean and undamaged.*

(b) *To fill the magazine:—*

- (i) *Hold it, with its base on your thigh; put a round on the platform well back between the lips, with its base towards the projection on the platform (see Fig 7), and press it down and forwards with your thumb.*

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- (ii) *Put in 28 rounds, counting them as you go; make sure that the rim of each round is in front of the rim of the round underneath it.*

- (c) *To empty the magazine, push the rounds out forward one by one with the side of the nose of a bullet. Be careful not to hit the cap of a round with the point of the bullet's nose; if you did it hard enough, it might go off (see also Lesson 4, para 8).*

7. Practise the squad; men will get plenty of practice at filling magazines as their training goes on; whenever they do it, make sure they do it right.



Fig 7.—Filling a magazine

LOADING

8. *The loading position (see Fig 8).—Explain and demonstrate.—This is the loading position:—*

- (a) *Lie down straight behind the gun, with your legs together.*
- (b) *Hold the small of the butt with your left hand, the pistol grip with your right; keep your right forefinger outside the trigger guard.*

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Fig 8.—The loading position

9. Loading (see Fig 9).—Explain and demonstrate.—To load the gun:—

- (a) Put the change lever at "S", and push forward the magazine opening cover.
- (b) Take a magazine from your utility pouch, see that it is filled correctly, and not damaged; put it on the gun forward end first with the rounds pointing forwards, and snap it home. Make sure it is firm.



Fig 9.—Loading

UNLOADING

10. Explain and demonstrate.—To unload:—

- (a) Put the change lever at "S", lift the butt to your shoulder, if it is not there already, and cock the gun.
- (b) Take off the magazine with your right hand by pressing the magazine catch with the bottom of the palm; put the magazine in the utility pouch.
- (c) Push the change lever forward, aim where it would not be dangerous if you fired a live round, press the trigger, cock the gun, and press the trigger again.

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- (d) Lower the butt, close the magazine opening cover and the ejection opening cover (press up the catch and pull it towards you); put the sights down, lower the leaf (Mark 2 or 3 backsight), move the change lever to "S", stand up, and report "Gun clear".

11. Make the men practise loading and unloading.

SIGHTSETTING

12. Mark 2 and 3 backsights.—Explain and demonstrate in any convenient position:—

- (a) Mark 2 and 3 backsights have the leaf marked from 2 to 16 (hundred yards), odd numbers on the right, even numbers on the left; fifties are not marked; you have to judge them.
- (b) To set your sights, turn the adjusting screw until the top of the slide is level with the range line that you want.

13. Mark 1 backsight.—Explain and demonstrate:—

- (a) When you turn the drum, the arm and aperture rise or fall. The drum is marked from 2 to 20 (hundred yards), and moves in 50-yard clicks.
- (b) To set the sights at exact hundreds of yards, turn the drum until the right number is in the middle of the window; to set them at a fifty, set the nearest hundred, and then turn the drum on or back one click.

14. Explain.—When you are given a range, "300", for example, set the sights, lift the butt to your shoulder, and cock the gun.

15. Practise the squad at loading, sightsetting and unloading.

MAKING SAFE

16. Load your gun and set a range; explain and demonstrate:—

If you have to move with a magazine on the gun, you must first "make safe":—

- (a) Unload, but do not close the magazine opening cover.
- (b) Inspect a full magazine and put it on the gun. Make sure the change lever is still at "S".

17. Make the men practise loading, sightsetting, and unloading and making safe.

CONCLUSION

18. Questions from and to the squad.
19. Sum up.

AIM

1. To practise stripping and assembling all groups of the gun.

PRACTICE 1.—STRIPPING

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STORES

2. Guns, wallets, drill cartridges.

NOTES

3. Men must be able to strip and assemble their guns accurately and quickly, but do not make them do it against time, or they may damage the guns; in competitions judge the men on whether their actions are correct, and how well they know the parts of the gun.

PRELIMINARIES

4. Safety precautions.

PRACTICE

5. Stripping and assembling the five groups (Lesson 1).

CONCLUSION

6. Questions from and to the squad.
7. Sum up the progress made.

LESSON 3.—AIMING, HOLDING AND FIRING

AIM

1. To teach recruits how to fire.

STORES

2. Guns, magazines, wallets, drill cartridges, utility pouches, targets, eye discs.

NOTES

3. The real test of a man's hold is to make him fire live ammunition in bursts; but you can do a lot to see that he knows:—

- (a) How to hold and fire correctly.

(b) That his hold must be firm before he fires, not tightened up when the gun begins to vibrate.

(c) That both hands must pull the gun straight back into the shoulder; and that he will throw the gun off aim if he applies pressure unevenly, or pulls to left or right with either hand.

4. During their early training, make the men declare their point of aim.

5. To test the firmness of a man's hold, pull the gun forward. To test his aim, hold and trigger work, and how he raises and lowers the muzzle, use an eye disc, but make sure there is no magazine on the gun.

6. To make practice with drill cartridges more realistic, get a man to lie on his side on the right of the gun and cock the gun again instantly every time the firer presses the trigger; then the firer has to press the trigger properly, and his aim is realistically disturbed, every time he fires.

7. Read also Chapter 2, Section 4.

PRELIMINARIES

8. Safety precautions. Revise loading and unloading (Lesson 2); leave the guns loaded.

APPROACH

9. Explain the aim of the lesson.

AIMING

10. You aim a LMG in the same way as a rifle; but the aperture of the backsight is larger, and you must be careful to get the tip of the foresight in the middle of it. Fig 10 shows a correct aim picture.



Fig 10.—Correct aim picture for a LMG

HOLDING AND FIRING

11. Explain and demonstrate paras 12-17.
12. *The main type of fire required of a LMG is bursts of three to five rounds, though the exact length of burst will vary depending upon the target, the range and the skill of the firer.*
13. *When the range is given —*
 - (a) *Act as already taught (see Lesson 2).*
 - (b) *Pull the butt backwards and downwards with the left hand, keep the left elbow well forward.*
 - (c) *Hold the pistol grip with the right hand, with the forefinger on the trigger. The butt should be pulled back into the shoulder.*
 - (d) *To lock the hold, turn the wrists inwards, and press the chin against the butt (see Fig 11).*



Fig 11.—Holding

14. *When a target is indicated:—*
 - (a) *Move the gun and your body until they are in a straight line with the target. Ensure that the bipod is square to the target.*
 - (b) *Move the elbows or alter the length of the bipod legs until aim can comfortably be taken at the target.*
15. *On the command "Bursts fire":—*
 - (a) *Move the change lever to "A" and take up the slack of the trigger.*
 - (b) *When the aim is correct, squeeze the trigger and keep it pressed long enough to fire the desired length of burst. Declare the point of aim at the moment of firing.*

- (c) *Open the left eye and observe.*
- (d) *Release the trigger completely, and continue to fire at the rate of one magazine a minute. Aim should be corrected as necessary.*
16. (a) *On the command "Stop", move the change lever to "S" and rest the butt on the ground. If the magazine needs to be changed, cock the gun and change it before resting the butt.*
- (b) *On the command "Go on", continue firing as before.*
17. *It is the firer's job to see that there is a full or nearly full magazine on the gun, and to allow for wind when aiming.*
18. *Practise the squad*

OTHER TYPES OF FIRE

19. Explain:—

- (a) *Whenever the word of command "Fire" is given alone, move the change lever to "R" and fire exactly as has been already taught. This will cause single shots to be fired, and the rate should be one magazine a minute.*
 - (b) *If "Rapid fire" is ordered, move the change lever to "A" and fire bursts at a rate of up to four magazines a minute, but do not sacrifice accuracy for a high rate of fire.*
 - (c) *When a moving target has to be engaged, bursts of eight to ten rounds offer the best chance of hitting it.*
20. *Practise the squad.*

CONCLUSION

21. *Questions from and to the squad.*
22. *Sum up; stress the importance of correct holding and accurate aiming and firing.*

LESSON 4.—IMMEDIATE ACTION, AND GAS STOPPAGE

AIM

1. *To teach recruits the immediate action (IA) to take if the gun will not fire or stops firing, and what to do if it stops for lack of gas.*

STORES

2. *Guns, magazines, utility pouches, drill cartridges, wallets, targets.*

PRELIMINARIES

3. *Safety precautions. Revise loading, firing and unloading (Lessons 2 and 3).*

APPROACH

4. *If you look after your gun properly, you will seldom have a stoppage; but if you do have one, you must know how to get the gun going again at once.*

IMMEDIATE ACTION

5. Explain and demonstrate.—*If the gun will not fire, or stops firing, your immediate action is to COCK THE GUN, CHANGE THE MAGAZINE, AIM AND FIRE; this immediate action is called IA for short, and you must practise it until you can do it without thinking. The IA puts most stoppages right.*

6. Practise the men; order "Gun firing all right—gun stops". When they have completed the IA, order "Gun firing all right".

GAS STOPPAGE

7. Explain and demonstrate.—*If you try the IA, and the gun fires one or two rounds and then stops again, it may be for lack of gas; to put it right:—*

- (a) Cock the gun, take off the magazine, and press the trigger.
- (b) Cock the gun again, and rest the butt on the ground.
- (c) Disconnect the barrel nut, and ease the barrel forward by the handle until you can turn the gas regulator.
- (d) Turn the regulator to the next larger hole, by putting the combination tool or the nose of a round in the upright slot and turning it away from you.
- (e) Put the barrel on again, lower the carrying handle, put the same magazine back on if it is full enough, aim and fire.
- (f) Replace any tool, but not any round (see para 8), used in its correct place when it is convenient.
- (g) You have to decide whether it is better to move forward on the left of the gun, or pull the gun back to you, to get at the gas regulator.

8. Explain.—*It is important that any round, whether damaged or not, which is involved in a stoppage or used as a tool, be removed from use. Such rounds are not to be replaced in a magazine, nor is any attempt to be made to fire them.*

9. Practise the men; order "Gun firing all right—gun stops"; then, when they have finished the IA, order "Gun fires one or two rounds, and stops again" and finally "Gun firing all right".

PRACTICE

10. Give the men more practice in the whole lesson. Represent the noise of the gun by tapping a magazine with a pencil, or in some such way; otherwise the men learn to act on words of command only, and may do nothing when the gun really stops.

CONCLUSION

11. Questions from and to the squad.
12. Sum up.

PRACTICE 2.—FIRING, IMMEDIATE ACTION, AND GAS STOPPAGE

AIM

1. To give men practice at firing, carrying out the IA, and putting right a stoppage caused by lack of gas.

STORES

2. Guns, magazines, wallets, utility pouches, drill cartridges, targets.

PRELIMINARIES

3. Safety precautions. Explain Training Tests 4 and 5 (see page 73).

PRACTICE

4. Give the men practice at firing, carrying out the IA, and remedying a stoppage caused by lack of gas. Competitions and tests, perhaps based on the training tests, help to keep men interested. See Lesson 3, para 6, and Lesson 4, para 9.

CONCLUSION

5. Questions from and to the squad.
6. Sum up how the men have progressed.

LIVE FIRING 1.—SINGLE ROUNDS AND BURSTS

AIM

1. To teach recruits how to prepare the gun for firing, and clean it after firing, and to let them fire it.

STORES

2. Guns, ammunition, white screen with black aiming marks, grouping ring, holdalls, wallets, binoculars.

NOTES

3. Recruits must not fire LMGs until they have fired their rifles.
4. LMGs must be zeroed before recruits fire them. See Chapter 2, Section 3. See that each man knows which gun and barrel he is using, and always fires with the same one from now on.
5. 25 yards/metres is the best range for detecting aiming and holding faults.
6. Chapter 2, Section 4 deals with coaching.
7. No one who cannot get a 2-inch group with single rounds at 25 yards/metres, and a 4-inch with bursts, will get good results in the LMG course; do all you can to get men to group well.

8. You need several periods for this live firing, preferably consecutive. Repeat the shooting part as often as time and ammunition allow. If you have a long firing period, remember to stop now and then to clean and oil the guns, and clean their chambers.

PRELIMINARIES

9. Safety precautions.

APPROACH

10. *The gun will not fire accurately and without stoppages unless you look after it and clean it properly.*

CLEANING BEFORE FIRING

11. Explain paras 12-14, and get the men to clean their guns as you do so; only demonstrate if you have to.

12. **Stripping.**—Before you can clean the gun for firing, you must strip it in the ordinary way, and also:—

- (a) Lift the extractor stay with your finger nail, and take it out, and the extractor and spring.
- (b) Press down the barrel nut plunger, and lift out the barrel nut.

13. **Cleaning**—

- (a) Clean the whole gun and leave it dry.
- (b) Clean the magazines with the magazine cleaning brush (stripping if necessary), make sure that they are not dented, that they work freely, that the bottom plate is secure, and that the lips are not damaged. Leave their outsides slightly oily.

14. **Examining and oiling.**—Before firing, as the gun is assembled, it is to be oiled. Normal oil is to be used under ordinary and arctic conditions, but a special oil is issued for tropical temperatures. Pay particular attention to oiling the locking shoulder of the breech block, the bearing surfaces of the breech block and piston, and the piston guide ribs, including the guides in which they run. In sandy and dusty conditions, the application of graphite grease will improve operation. *Examine the gun as follows:—*

- (b) **Bipod.**—See that the legs, shoes and springs are not damaged.
- (c) **Body.**—Put in the barrel nut, and tap it into position. See that the body fits tight in the bipod sleeve, that the magazine fits securely, and that the magazine opening cover runs easily; see that the barrel nut catch, and the leaf, aperture and milled head of the backsight are tight.
- (d) **Butt.**—Make sure that the return spring rod, change lever, trigger and ejection opening cover work properly. Push the rod in a bit, and pour a little oil into the recess.
- (e) **Barrel.**—Examine the bore, foresight, foresight protectors and carrying handle. See that the gas regulator is set at the right mark.

(f) **The second barrel.**—Examine it in the same way. Each gun has two barrels; when one gets too hot, it takes very little time to take it off and put the other one on; they need changing after ten magazines of rapid fire, or perhaps sooner in a hot climate. Use both barrels in turn, and try to fire about the same number of rounds through each of them. See that the barrels fit firmly on the gun.

(g) **Piston group.**—Test the firing pin and spring, to see that the pin sticks out the right amount, and withdraws properly. Examine the extractor, stay and spring, put the extractor back first, then put the spring on the stay and squeeze them into position; examine the feedpiece.

(h) Put the change lever at "A", press the trigger and keep it pressed and move the cocking handle backwards and forwards a few times; do this immediately before firing in very cold weather.

(j) **Spare parts.**—See that they are clean and complete (see Fig 6); and that the oil cans are full and there is some flannelette.

FIRING

15. Explain.—What you learnt about grouping with the rifle applies equally to the LMG; and it is important to get a small group with both single shots and bursts.

16. Each man should fire Practices 1 and 2 of the range course at least twice; coaches must correct faults after the first time.

17. Discuss each group with the firers after each detail has fired. For common faults that you can spot from the shape of the group, see Chapter 2, Section 4, para 6.

18. Inspect guns, pouches and magazines for ammunition.

CLEANING AFTER FIRING

19. Explain how to clean the guns, but make the recruits do it themselves:—

- (a) Strip the gun as you did when you cleaned it before firing. Use the proper cleaning materials only; NEVER use sandpaper or any other abrasive to clean gas affected parts.
- (b) **The barrels.**—Clean as for a rifle. To get hard fouling off, use a gauze on a double pullthrough, with one man holding the barrel, and two others pulling through without letting the cord rub on the ends of the barrel. Get two men to help you, and demonstrate how to use the double pullthrough (see Fig 12). Clean and inspect the barrel in the same way as the rifle, but use a piece of flannelette 4 inches by 3 in the end loop. Clean the chamber in the same way as a rifle's.



Fig 12.—Using a double pullthrough

- (c) *The body group.*—Clean the gas cylinder with the mop and flannelette; to get fouling off, oil the wire brush, put it in from the breech end handle first, and turn it clockwise; oil the gas cylinder with flannelette on a pullthrough. Clean the rest of the body group, and get all fouling out of the large holes at the front of the gas cylinder. Use the special tool to get fouling out of the recess at the front of the gas cylinder.
- (d) *The piston group.*—Clean it, particularly the face of the breech block and the piston head.
- (e) *The butt group.*—Clean it.
- (f) *Magazines and spare parts.*—Clean and check them.
- (g) *If you cannot clean the gun immediately after firing, oil the barrel and gas-affected parts, and clean it properly later.*

19A. Explain how to clean the 7.62-mm Converted Bren, but make the recruits do it themselves.

- (a) *As shown in para 19(a) above.*
- (b) *The barrels.* Using the cleaning rod and flannelette, clean as for the rifle. To remove hard fouling scour out using the oiled bore brush attached to the rod. Clean out with flannelette 4 inches by 1½. Inspect and oil. Clean the chamber as you were shown during daily cleaning, and clean the flash hider.

(c) *The body group.* Scour out the cylinder using the rod and LMG cylinder scouring brush. Clean with flannelette 4 inches by 4, inspect and oil. Clean the rest of the body group and get all fouling out of the large holes at the front of the gas cylinder. Use the special tool to get fouling out of the recess at the front of the gas cylinder.

(d) *Clean the rest of the gun as shown in para 19(d), (e), (f) and (g) above.*

20. Inspect the guns, and tell the men to oil and assemble them; inspect the magazines and spare parts, and see that they are slightly oily.

CONCLUSION

21. Questions from and to the squad.

22. Sum up.

LESSON 5.—HOW THE GUN WORKS, AND OTHER STOPPAGES

AIM

1. To teach recruits how the gun works, what causes stoppages, and how to cure them.

STORY

2. Guns, sectionalized guns, magazines, utility pouches, holdalls, wallets, targets, diagrams, drill cartridges, empty cases and the front half of a separated case.

NOTES

3. Explain and demonstrate each phase, and then ask questions on it; do not expect recruits to repeat what you said, like parrots.

4. You should be able to get the men to reason out quite a lot of the mechanism for themselves

PRELIMINARIES

5. Safety precautions.

6. Draw back the butt, and take out the piston group, magazine catch and ejector. Put an empty case in position on the face of the breech block.

APPROACH

7. *If you understand the mechanism of the gun, you will find it easier to understand stoppages and put them right.*

HOW THE GUN WORKS

8. *The gas from the fired round drives the piston group back and takes out the empty case; the return spring drives it forwards, loads and fires. This goes on as long as you keep the trigger pressed and there are rounds in the magazine.*

THE BACKWARD AND FORWARD ACTION (See Fig 13)

9. The backward action:—

- (a) When gas forces the bullet up the barrel, some of it goes through the gas vent and gas regulator into the gas cylinder; it hits the face of the piston, drives the piston on to the piston buffer, and compresses the return spring.
- (b) The extractor grips the empty case and carries it backwards as far as the ejector, which throws it out of the gun downwards through the ejection slot in the piston.

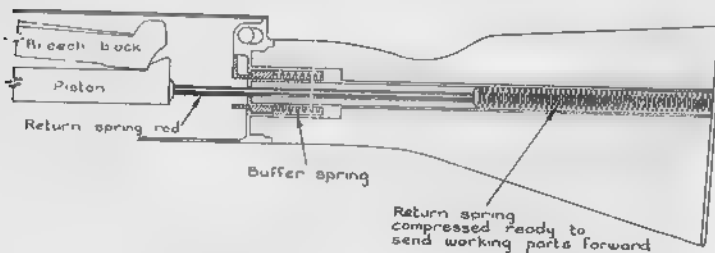
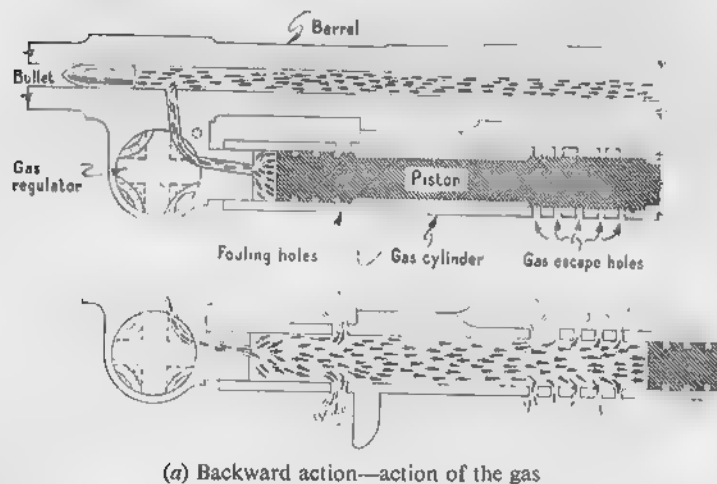


Fig. 13—The backward and forward action

10. The forward action:—

- (a) The piston buffer stops the piston, and the return spring drives it forward again; the feed piece on the breech block meets the base of the next round in the magazine and pushes it into the chamber, and the extractor closes over the rim of the round.
- (b) The piston goes a little further forwards, and the piston post drives the firing pin through the hole in the face of the breech block into the cap of the cartridge, and fires the round.

STOPPAGE DRILL

11. Put the front part of a separated case in the chamber.

12. Explain and demonstrate.—If you carry out the 1A, and the gun will still not fire:—

- (a) Cock the gun, take off the magazine, put down the butt, and look inside the body.
- (b) If you can see an empty case or a jammed round, take it out, put back the magazine, aim and fire.
- (c) If you cannot see any obstruction, screw up the base of the clearing plug (see Fig 14) tight, put it in the chamber, press the trigger, cock the gun, see that the clearing plug has brought away the separated case, put back the magazine, aim and fire.
- (d) To get the separated case off the clearing plug, unscrew the base, and push the stem through the case. Put the plug back in the wallet when you have a chance.

13. Make the men practise stoppage drill; but, to save the clearing plugs from damage, make them put a drill round in the spare parts tin and use that instead. Your orders, and the men's actions on them are:—

Order	Action
"Gun firing all right—gun stops".	Carry out the 1A.
"Gun won't fire".	Look into the body.
"Obstruction in body (or chamber)".	Carry out the appropriate drill.
"Gun firing all right".	

CAUSES OF STOPPAGES

14. The 1A cures stoppages caused by:—

- (a) An empty magazine; the magazine platform holds the working parts back.
- (b) A badly filled magazine. If the rim of one round is behind the rim of the next, both are fed together, and the piston group cannot go forward.
- (c) A misfire, which produces no gas to drive the piston back.
- (d) Hard extraction, when a dirty case fits so tightly in the chamber that the gas cannot drive the piston back. It will not happen if you keep your ammunition and chamber clean.

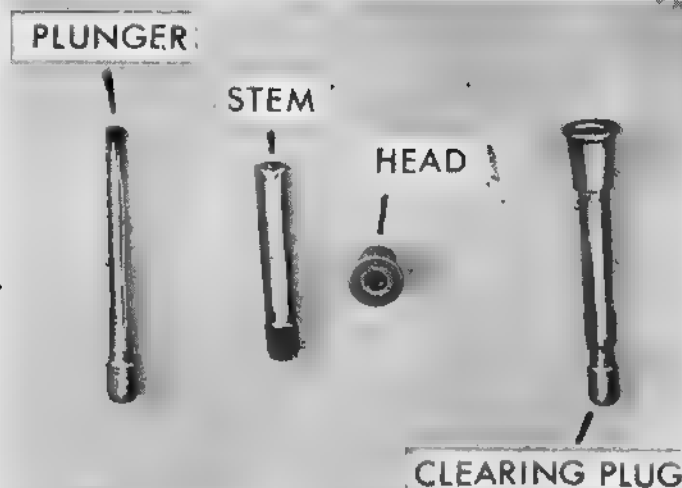


Fig 14.—The clearing plug

15. If too little gas gets through the gas regulator or dirt gets into the gun, it may not drive the piston far enough back to eject the empty case or to feed another round. Move the regulator to a larger hole to get more gas through, and ask an armourer to clean the regulator at the next opportunity.

16. Stoppage drill (para 12) cures stoppages caused by:—

(a) A live round or empty case jammed in the breech.

(b) The front part of a separated case left in the chamber and keeping the next round out.

17. Stoppages caused by weak or broken parts are rare; but if you try the IA and stoppage drill without success, clear the gun, look for these signs, and change the offending part:—

Sign	Probable cause
Cartridge not struck.	Broken firing pin.
Cartridge not properly struck.	Weak return spring. Fitting a new one is a job for an armourer.
Repeated failure to extract and eject.	Broken extractor or ejector.

CONCLUSION

18. Questions from and to the squad.
19. Sum up.

RESTRICTED

PRACTICE 3.—STOPPAGES

AIM

1. To give men practice at remedying stoppages.

STORES

2. Guns, magazines, wallets, holdalls, drill cartridges, targets.

PRELIMINARIES

3. Safety precautions.

PRACTICE (See Lesson 3, para 6, and Lesson 4, para 9)

4. Carrying out the IA, and curing a stoppage caused by lack of gas.
5. Curing a stoppage caused by an obstruction in the body or chamber.
6. Curing stoppages caused by broken or weak parts.
7. Question the men on why these things cause stoppages, and how the various remedies cure them.

CONCLUSION

8. Questions from and to the squad.
9. Sum up.

LIVE FIRING 2.—SINGLE ROUNDS AND BURSTS

AIM

1. To give men more firing practice.

STORES

2. Guns, slings, magazines, holdalls, wallets, ammunition, range and figure targets.

NOTES

3. Chapter 2, Section 4 deals with coaching.
4. Good butt marking is important; markers should signal the result of every shot and burst, and show the order in which shots of a burst arrived if they can.
5. Repeat the firing as often as ammunition allows.

PRELIMINARIES

6. Recruits should prepare the guns for firing, and fill their own magazines.

FIRING

7. Make the men fire selected practices from Stage 2 of the LMG range course.

CONCLUSION

8. Questions from and to the squad.
9. Sum up results.

LESSON 6.—HANDLING

AIM

1. To teach recruits to handle the gun in the field.

RESTRICTED

DRESS AND STORES

2. Battle order.
3. Guns, slings, 13 magazines per gun, holdalls, wallets, utility pouches and something to depress magazine platforms; coins will do.

NOTES

4. Choose ground with all types of cover on it, natural and artificial. The lesson must be done outside using natural targets.

PRELIMINARIES

5. Safety precautions. Order "Load".

APPROACH

6. Nos. 1 and 2 must work as a team; No. 1 must always examine his gun, magazines and wallet, No. 2 his magazines and holdall, before going into action. Later lessons deal with the details of ammunition supply.

Explain: Normally the section will carry 13 magazines. No. 1 will carry one on the gun and four in basic pouches and No. 2 will carry eight, four in basic pouches and four in utility pouches.

FIRE POSITIONS (Figs 15-18)

7. Explain and demonstrate how to fire from one sort of cover (make the men try out other sorts for themselves during practice) (paras 104-107 H). Firing a LMG from cover is much the same as firing a rifle, but there are a few extra things to remember:—

- (a) To make the best use of cover, you sometimes have to fold the bipod legs and rest them folded on the cover; but the gun is more accurate when you fire it from the bipod.
- (b) Always see that the ejection opening is clear of the cover.
- (c) On a slope you can lengthen either leg of the bipod to get the gun level.

BATTLE HANDLING

8. Explain:—Nos. 1 and 2 work as a team. This team work can only be perfected by practice. As a guide the basic duties of each No. are as follows:—

- (a) No. 1 carries and fires the gun according to the fire direction and control orders given by the section commander or by the No. 2. When detached from the section he will be directed and controlled by the No. 2. If working alone he must act on his own initiative.
- (b) No. 2 commands the group and assists the No. 1 in every way possible and is responsible for:—
 - (i) Supplying the gun with ammunition.
 - (ii) Acting as link between section commander and the Bren group and passing on orders to the No. 1.
 - (iii) Directing the rate of fire according to the movement of the remainder of the section, eg, ordering rapid at the appropriate moment in the final assault. He does not fire his rifle except if the gun breaks down or for emergency protection.
 - (iv) When the Bren group is moving independently, leading the way and looking out for probable and alternative gun positions.
 - (v) Observing, correcting and directing fire.



Fig 15.—Firing from low cover

BATTLE HANDLING—BASIC DRILL

8A. What the No. 2 does. Explain and demonstrate:—

- (a) On the command "Take cover".—
 - (i) Run to and get down behind the nearest cover or to that cover pointed out by the section commander in his anticipatory order. If you have selected the gun position point it out to the No. 1 and then, without exposing yourself, put your utility pouches of full magazines by the gun. Find a position clear of and between the gun and the section commander so that you can hear his orders and observe the actions of the rifle group, supply the gun with ammunition and also observe, correct and direct fire.
 - (ii) When you receive or give the order, "Prepare to advance (or move)", get behind cover, collect all magazines, including those in the utility pouch by the gun, and fasten them in your pouches. On the command, "Advance (or move)", do not break cover from the exact spot from which you have been observing.



Fig 16.—Firing from high cover



Fig. 17.—Firing from cover crouching

(b) What the No. 1 does. Explain and demonstrate:—

On the command "Take cover":—

- (i) Run to and get behind the nearest suitable cover and get into a position of your own choosing, or that which is pointed out to you by No. 2 from which you can watch the whole of the front without being seen; keep the gun under cover. That is the position of observation.
- (ii) If no other order follows, try to spot the enemy and shoot them until the section or group commander takes control. Remember, "Run—down—crawl—observe—fire", and use your initiative.
- (iii) When the section or group commander orders a range, set your sights, mount the gun and cock it; that is the position of readiness. Fire as ordered.
- (iv) Actions on "Stop" and "Go on" are as already taught.
- (v) On the command "Prepare to advance" (or "move"), make safe, get yourself and the gun back behind cover, move or roll to one side and wait for orders to move. If there is no time to make safe, move the change lever to "S" and make safe at the first opportunity.



Fig 18.—Firing round cover

- (vi) *When you receive the order, "Advance" (or "Move"), take care that you have all your magazines with you, that your pouches are done up and that you do not break cover from the exact spot from which you have been firing.*

SUSTAINED FIRE

9. Use one of the squad as No. 1, and explain and demonstrate.—*If rapid fire has to be kept up for some time, No. 2 lies on the left of the gun to help No. 1 to change magazines and barrels:—*

- (a) *When he wants a fresh magazine, No. 1 cocks the gun, takes off the magazine, calls "Change", and passes the magazine under the gun. No. 2 puts a full magazine on the gun, and puts the empty one away in a utility pouch.*
- (b) *As No. 2 puts on the tenth magazine, he calls "Tenth magazine—barrel", and sees that the gas regulator of the other barrel is set right. When the magazine is empty, No. 1 cocks the gun, takes off the magazine, closes the magazine opening cover, and calls "Barrel". No. 2 changes the barrel, and puts a full magazine on the gun. No. 1 waits until the barrel nut is engaged before opening the magazine opening cover.*

PRACTICE

10. Give all the men practice in the whole lesson, in turn, first by word of command, then by giving gun teams simple situations in which they have to get into position, and engage the enemy without orders. No. 1 should have a magazine on the gun and four magazines in his basic pouches; and No. 2, eight magazines, four in basic pouches and four in utility pouches. Use as many types of cover as you can.

11. Use the men who are not practising to criticize those that are; send some of them forward to do it from the enemy's point of view.

CONCLUSION

12. Questions from and to the squad.
13. Sum up.

AIM

PRACTICE 4.—HANDLING

1. To give men more practice at handling.

DRESS AND STORES

2. Battle order, guns, slings, magazines, holdalls, wallets, utility pouches, magazine platform depressors, targets.

NOTES

3. Choose ground with all sorts of cover on it. If you have to do the practice indoors, improvise fire positions, and use landscape targets.

PRELIMINARIES

4. Safety precautions.

PRACTICE

5. Give all men practice in turn; use those that are not practising to criticize the elementary handling, fieldcraft and fire discipline of those that are; send some of them forward to do it from the enemy's point of view. These are the things to practise:—

- (a) Mounting the gun to fire from all types of cover.
(b) Advancing to and occupying fire positions, engaging targets, IA, gas stoppage and other stoppage drill, stoppages caused by weak springs or broken parts, changing magazines and barrels, replacing casualties, and moving to other fire positions.

CONCLUSION

6. Questions from and to the squad.
7. Sum up what the men have learnt from the practice and how they have progressed.

AIM

LESSON 7.—TRIPOD 1

1. To teach recruits how to mount and dismount the gun and tripod as a drill.

STORES

2. Guns, tripods, magazines, drill cartridges, utility pouches, holdalls, wallets, sandbags.

NOTES

3. The tripod is used mainly in defence, and fire trenches have to be modified to take it.

PRELIMINARIES

4. Safety precautions.

APPROACH

5. You mount a gun on a tripod to shoot on a fixed line or within fixed limits at night, or in smoke or fog, or to shoot by day at suitable targets.

DESCRIPTION (See Fig 19)

6. Each rifle company has three tripods and normally carries them in its transport. If you have to manhandle one, there are D's for slings on the main frame, and slots on the traversing arc.

MOUNTING AND DISMOUNTING THE GUN AND THE TRIPOD (See Fig 20)

7. Mounting.—Explain and demonstrate:—

(a) No. 2 prepares the tripod. To do that:—

- (i) Lay the tripod down with the front leg underneath, and loosen the leg clamping handles.
 - (ii) Swing the back legs back, and clamp them in line with the main frame. Swing the front leg forward, and clamp it.
 - (iii) Loosen the inside traversing stop, and move it to the other end of the arc.
 - (iv) Loosen the traversing clamp; move the elevating gear to the middle of the arc, and clamp it there.
 - (v) Loosen the elevating clamp, slide it half way forward in the sleeve, and clamp it there. Put the elevating sleeve upright.
- (b) No. 1 mounts the gun. To do that, pull out the front and rear mounting pins, put the pin housing on the mounting pivots, front one first, and push in the pins again.
- (c) Nos. 1 and 2 together adjust the legs of the tripod so that the gun points at the target and the traversing arc is level from front to rear and from side to side; tighten the clamps; and stamp in the feet, and cover them with sandbags or turf.
- (d) No. 1 then loads.

8. Dismounting.—Explain and demonstrate:—

- (a) No. 1 dismounts the gun. To do that, make safe or unload, pull out the mounting pins, lift the gun off the tripod, and put back the mounting pins.
- (b) No. 2 dismounts the tripod. To do that:—
 - (i) Screw the elevating screw firmly down; fold the elevating gear down forwards; loosen the elevating clamp, slide the elevating sleeve back until the projection on the front of the traversing slide engages in the groove under the elevating nut, and clamp it up again.

(ii) Unclamp the traversing slide, move it to the left of the arc, and clamp it there.

(iii) Unclamp the legs, fold them, and clamp them again.

9. Give the men practice in turn at mounting and dismounting the gun and tripod. Leave the guns on the tripods at the end of the practice.

AIMING AND FIRING

10. Explain and demonstrate:—

- (a) To aim, set the sights, put your shoulder against the butt, loosen the traversing clamp, move the slide along the arc until the sights are pointing at the target, and clamp it there; turn the elevating nut (and adjust the sleeve, if necessary), and clamp up when the aim is correct.
- (b) You fire the same as from the bipod, but you can fire longer bursts if you want to, and you need not have the butt in the shoulder or put any pressure on the gun. The rules for altering your aim are the same as for aiming.
- (c) No. 2 helps No. 1 from a position to his left.

11. Give the men practice at aiming and firing.

CONCLUSION

12. Questions from and to the squad.
13. Sum up.

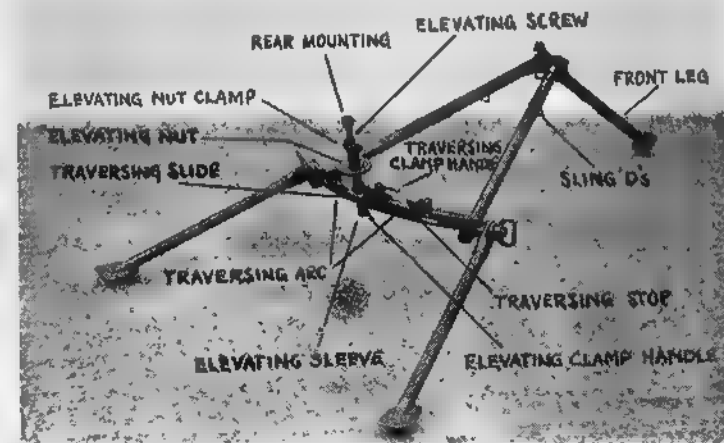


Fig 19.—The tripod



Fig 20 —The gun and tripod mounted

LESSON 8.—TRIPOD 2

AIM

1. To teach recruits how to aim and fire the gun on fixed lines and within fixed limits, with or without a tripod.

STORES

2. As for Lesson 12, plus stakes, angle irons, cords and wire.

NOTES

3. This lesson covers only the actions that Nos 1 and 2 take on their section or group commander's orders. Chapter 2, Section 5, deals with the tactical implications of fixed lines.

PRELIMINARIES

4. Safety precautions. Get the guns and tripods mounted.

APPROACH

5. The commonest uses of the gun on its tripod are to fire on a fixed line or within fixed limits, so that you can shoot effectively in darkness, fog or smoke.

FIRING ON FIXED LINES

6. Explain and demonstrate:—

- (a) Mount the gun on its tripod in daylight, set the sights, and aim at the target. Clamp both traversing stops against the slide.
- (b) Everyone in the section looks at the aiming mark, and at the sight setting and the reading on the traversing arc, and memorizes them. Then you can take the gun off the tripod and use it somewhere else; but make certain that all the clamps are tight, and that the tripod is not moved. It is usual to put the gun back on the tripod at dusk, or as soon as fog or smoke is expected to hide the target.
- (c) When you are ordered to fire on the fixed line, fire as you were told to; so long as the tripod is well bedded in, and no one has interfered with it, the bullets will hit the target, although you cannot see it.

7. Practise the squad.

FIRING WITHIN FIXED LIMITS

8. Explain and demonstrate.—When the target that you want to be able to engage is a large one, like a wire obstacle or an approach.—

- (a) Set the sights, and aim in daylight at the left hand end of the target, and clamp the right hand traversing stop against the slide; then aim at the right hand end, and clamp the other stop against the slide.
- (b) When you fire, traverse irregularly.

9. Practise the squad.

IMPROVISING A FIXED LINE MOUNTING (See Fig 21)

10. Explain and demonstrate.—If you have no tripod, you can still lay a fixed line, if you have to, by securing the gun with any materials available.

Here are two possible ways of doing it:—

- (a) Bed the bipod legs into the ground, and fix them with sandbags or turfs, rest the butt on a sandbag at the right elevation; aim, and fix the aim by driving angle irons or stakes into the ground on either side of the gun; put sandbags behind the butt.
- (b) Lash the gun firmly to a tree or post.

11. Practise the squad.

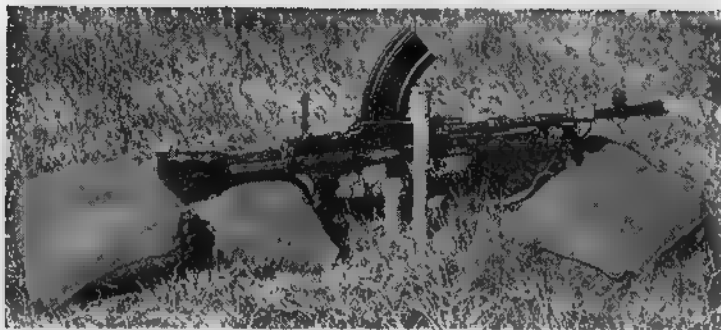


Fig 21.—An improvised fixed line mounting

SAFETY

12. Explain and demonstrate:—

- (a) *For safety's sake your target must not be too close to any friendly troops; the rule is. —*
 - (i) *If the gun is on its tripod, the target, or, if you are firing within fixed limits, any part of it, must not be within 100 yds of them.*
 - (ii) *If the gun is on an improvised mounting, the target must not be within 350 yds of them.*
- (b) *Normally your section commander makes certain that all friendly troops are safe, but you must be able to check it. You can do it either by measuring the angle with your hand, or by unloading the gun, aiming at the nearest friendly troops and then at the target, and looking at the reading to each on the traversing arc; there must be at least 100 yds difference between the two readings.*

13. Practise the squad.

CONCLUSION

14. Questions from and to the squad.
15. Sum up.

LESSON 9.—HANDLING THE GUN AS AN AA WEAPON

AIM

1. To teach recruits how to handle the gun quickly as an AA weapon.

STORES

2. Guns, five magazines per gun in utility pouches (all marked "AA" in white), holdalls, wallets, drill cartridges, fire trenches, vehicles if available.

NOTES

3. Instructors must know everything in Chapter 2, Section 10.

PRELIMINARIES

4. Safety precautions. Gas regulators at No. 4 hole, guns loaded, and change levers at "A".

INTRODUCTION

5. *Everyone must know how to engage low flying aircraft with a LMG.*
6. *You will be told whether or not to shoot enemy aircraft. If the orders are to shoot, obey the following rules. —*
 - (a) *Only open fire at aircraft within range in the following circumstances —*
 - (i) *If you recognise the aircraft by its markings as an enemy aircraft.*
 - (ii) *If the aircraft is seen to attack a ground target.*
 - (iii) *If the aircraft dives on to an objective. (This does NOT apply to light aircraft or helicopters.)*
 - (b) *In the circumstances given in (a) (iii) above: do NOT fire at light aircraft or helicopters, because friendly ones are liable to fly anywhere without notice and may, for example, dive suddenly in order to take evasive action. Report immediately if you see an enemy light aircraft or helicopter or if you do not recognise it but suspect it of being enemy.*
7. *It is no use shooting at aircraft over 2,000 feet. As a rough guide, you cannot see much more than a silhouette at that height; below 2,000 feet you can see details.*

MAGAZINES

8. Explain:—

- (a) *Each gun has five AA magazines kept in special utility pouches; magazines and pouches are marked "AA" in white. The AA magazines are with the gun when ordered.*
- (b) *To fill an AA magazine, put in five rounds of ball first, then alternate tracer and ball rounds.*
- (c) *Never use an AA magazine for ground action except in an emergency.*

FIRING

9. Explain:—

- (a) *Always set the gas regulator at No. 4 hole. When you are firing up into the air, the spring has to drive the piston upwards instead of just forwards; it can do it more easily if there is extra gas to drive the piston hard against the buffer, which is itself spring loaded.*
- (b) *Concentrate on the target, fire a whole magazine in one burst, use the gun like a hosepipe, and direct the tracer stream on to the nose of the aircraft.*



Fig 22.—AA firing positions, kneeling and standing

FIRING POSITIONS (See Fig 22)

10. Kneeling.—Explain and demonstrate.—*This is the best position; kneel with your right knee well out, rest the butt against your thigh, and hold the carrying handle or the folded bipod legs with your left hand.*

11. Standing.—Explain and demonstrate.—*Shoot standing if you are in a fire trench; hold the gun as you do kneeling, but close to your side, with the butt under your arm or against your hip; keep your left foot well forward, with most of your weight on it.*

12. Make the men practise both firing positions.

FIRING (See Fig 23)

13. Explain and demonstrate:—

(a) *All actions must be extremely quick, and Nos. 1 and 2 have to work together.*

(b) *Duties of No. 1:—*

(i) *Cock the gun and concentrate on the target.*

(ii) *If the aircraft is coming straight for you, point the gun at its nose; if it is slow and crossing, point the gun well in front of it, so that it flies into the tracer stream, and swing the gun with the aircraft.*

(iii) *Fire a whole magazine in one burst, watch the tracer stream, and correct accordingly; if you see the stream going behind a crossing aircraft, make a bold swing forward.*

(iv) *If you have to turn about, do it to the left, to avoid No. 2.*

(c) *Duties of No. 2:—*

(i) *Wear the utility pouches with the AA magazines in them.*



Fig 23.—A LMG team in action against aircraft, standing

- (ii) *Stand or kneel just behind and to the right of No. 1; hold a full magazine in your left hand. Change magazines when one is empty.*
- (iii) *Make certain the fire is not likely to hit friendly aircraft or troops; be prepared to shout "Stop", knock the gun up, or whip off the magazine.*
- (iv) *If the gun stops, carry out the IA with your right hand*
- (v) *If No. 1 moves, move with him.*

14. Make the men practise firing, magazine changing and IA in pairs. Use these words of command: "Aircraft front (left or right)", "Stop" or "Make safe".

PRACTICE

15. Make the men practise firing from trenches, and from stationary and moving vehicles. Explain.—

- (a) *In a trench, lean against the back of it for support.*
- (b) *Different positions suit different vehicles; standing, kneeling or sitting may be best, and No. 2 must support No. 1 if he needs it.*

CONCLUSION

- 16. Questions from and to the squad.
- 17. Sum up.

LIVE FIRING 3.—AA LMG

AIM

- 1. To give men practice at firing tracer by the hosepipe method.

STORES

2. Guns, slings, AA magazines and utility pouches, ball and tracer ammunition, MT and AA targets.

NOTES

3. Infantry Training, Volume III, Pamphlet No. 32, 1958 (Army Code No. 9486), Chapter 12, describes AA ranges, targets and safety precautions.

4. The RAOC can supply rubber balloons and hydrogen gas on demand; the gas cylinders need a regulator, nipple and key to work them; these should be provided from local resources.

5. If may be possible to get a local RAF station to provide towed sleeve targets.

FIRING

- 6. Firers should fill their own magazines, and work in pairs.
- 7. If local regulations allow, they should fire standing and kneeling in the open, from weapon slits, and from stationary and moving vehicles.
- 8. Discuss and criticize each shoot.

SAFETY PRECAUTIONS

9. In peace time in addition to the precautions laid down in Pamphlet No. 32, mentioned above, an officer, warrant officer or senior NCO must stand immediately behind each firer. His duty is to stop firing if it looks like going outside the safety limits or endangering the towing aircraft or any others flying near; the quickest way is to take off the magazine.

LESSON 10.—SECTION HANDLING 1

AIM

- 1. To teach recruits how a section is organized and equipped, and what is meant by fire and manoeuvre.

STORES

2. Diagram, blackboard or a demonstration section to illustrate the organization of a section (para 10), model or blackboard to illustrate fire and manoeuvre, a section's weapons and ammunition.

NOTES

3. If there is a demonstration section, see that it is well rehearsed; if there is not, lay out a section's arms, ammunition, magazines and utility pouches on the ground.

4. Section handling is the link between individual weapon training and tactics, in which men learn to work in group and section teams. Each man must practise the duties of every member of the section.

5. Unless everyone's handling is instinctive, the section cannot work as a team at all, and NCOs must constantly watch and criticize it in all training from section exercises to higher formation training; in battle, section commanders have no time to do it, and rely on each man pulling his weight.

6. The smallest number of men that can fight as a section is five, a Bren group of two men, and a rifle group of the section commander and two men.

PRELIMINARIES

- 7. Safety precautions.

APPROACH

8. *Now that you know how weapons work and how to use them, the next thing to learn is how a team of men in a rifle section can work together and put that knowledge to the best use.*

SECTION ORGANIZATION

9. General.

- (a) *The rifle and LMG are the chief killing weapons of the infantry. Either can give effective fire support; but the rifle is the main assault*

weapon, so it is the LMG that usually provides intimate fire support for the movement of the section, especially in the assault. The normal fighting strength of a section is eight, but it can operate as low as five.

- (b) The section is the smallest infantry unit equipped and organized to fight on its own; it has one LMG, which every infantryman is trained to use.

10. Grouping.—Explain and demonstrate:—

- (a) Except possibly in defence, the section is divided into a rifle group and a LMG group. This is how they may be armed and equipped; but many things may make changes necessary—the section's task, its strength, the climate, the country and the opposition expected:—

Duty in Section	Weapon	Ball ammunition		Full LMG magazines	Other equipment
		SLR magazines (20-round)	Bandoliers (50-round)		
Section Commander	SL rifle and bayonet	4	1	—	Matchet, wire cutters, whistle, map, two 36 grenades, two 80 grenades
Nos. 1-5, Rifle Group (each)	SL rifle and bayonet	4	1	—	Two 36 or 80 grenades. See also subparas (b) and (e).
No. 1, LMG Group	LMG	—	—	7 (1 on the gun and 6 in basic pouches)	Spare parts wallet
No. 2, LMG Group	SL rifle and bayonet	1	1	6 (in basic pouches)	Two 80 grenades
Totals (1 section commander and 7 men)	1 LMG: 7 SL rifles and bayonets	25	7	13	See subparas (b) to (f).

- (b) They carry other things too, such as sandbags, matchets, picks and shovels, when required.
- (c) There are 25 magazines in the section, 20 for ground action and 5 for AA purposes. The men of the LMG group should always carry at least 13 of them; the remainder are carried by the riflemen or in company transport.
- (d) The section has 2,590 rounds of ball ammunition (this includes unit reserve) plus 100 rounds of tracer for AA use and target indication.
- (e) If the section needs its anti-tank weapons with it, two members of the rifle group each carry a projector and two No. 94 grenades. In that case the company commander may decide that sections should carry fewer magazines.
- (f) Company transport carries the holdall, magazines, ammunition and equipment that the men of the section are not carrying.

11. Practise the section at equipping themselves for battle.

12. Control.—The section commander may control the LMG himself, or put it under the LMG group commander and control it through him; occasionally the platoon commander may group the three LMGs together, and command them directly himself.

FIRE AND MANOEUVRE

13. Explain and demonstrate.—Infantry can seldom get to within assaulting distance of the enemy without the enemy being in a position to shoot at them; when that happens, whenever anyone is moving, someone else must fire at the enemy to prevent them from shooting at the movers; the "someone else" may be artillery, mortars, machine guns, tanks, aircraft or another section, but it is men of your own section who can most quickly produce accurate fire support where you need it. This is known as FIRE and MANOEUVRE, and is the basis of all tactics. These are some things to remember about it:—

- (a) The golden rule is that before one group moves, the other is in a firing position ready to open fire at once, or actually firing.
- (b) Both groups must make the best use of ground and cover.

14. Question the men on the principles of fire and manoeuvre. If possible arrange a simple demonstration of fire and manoeuvre, but do not let it be of anything as complicated as a section attack.

CONCLUSION

15. Questions from and to the squad.
16. Sum up.

LESSON 11.—SECTION HANDLING 2

AIM

1. To teach all the members of the section their duties in a section action.

DRESS AND STORES

2. Battle order, camouflage materials, blank ammunition if available, various figure targets. Stores laid down in Lesson 10, para 10, but no ball ammunition.

NOTES

3. Repeat this lesson several times, on different ground each time. Treat it as a basic lesson the first time, make it simple, and have the men in extended line; make it a bit more difficult each time, use other formations, make targets harder to recognize, have a live "enemy" with blank ammunition, introduce LMG stoppages and casualties in the LMG group, put the men into respirators, and so on, until eventually it is a small tactical exercise with live ammunition on a field firing range for trained soldiers. Always act as section commander yourself, and give all orders, but always be where you can see what each man is doing all the time; give fire control orders slowly, so that the men have time to set their sights and identify the target; and make certain that, if one group has to move covered by the other's fire, the other group is actually firing.

4. Impress on the men how important it is:—

- (a) To fire at once on the order.

- (b) If the plan is to move under cover of fire, not to move until the covering fire has actually started.

5. On all forms of training, section commanders must constantly stress what this lesson teaches.

PREPARATION

6. Choose and reconnoitre the ground carefully; remember that you want to practise fieldcraft, the choice of fire positions, the use of cover, and ammunition supply within the section. Use empty cases in bandoliers to make the practice realistic.

7. Put out figure targets in realistic enemy positions at ranges between 100 and 150 metres.

CRITICISM

8. If instructors are going to watch all they should and check faults effectively, they must be extremely active and get round the section really fast after they have given orders. These are the main points to watch:—

- (a) Elementary handling.—Fastening of pouches—loading and re-loading—use of the safety catch and change lever—action on "Stop" and "Go on"—care of arms and ammunition—counting of rounds fired—sight setting—making safe—ammunition supply.

- (b) Fieldcraft.—Use of cover—crawling—approaching and occupying positions—taking up a fire position without moving away after going to ground—getting into a fire position without first setting sights and spotting the target—choice of fire positions—mounting the LMG—recognition (and later indication) of targets—frequent changing of position to puzzle the enemy—"Down, crawl, observe, fire" drill.

PRELIMINARIES

9. Safety precautions.

10. Make the men prepare for battle, and equip themselves as detailed in Lesson 10, para 10 (a), but without ammunition; inspect them. Question them briefly on how a section is organized and equipped for battle.

APPROACH

11. *It is no good knowing how to handle your weapons, unless you can still do it without thinking in the confusion of battle. This lesson teaches you what each man has to do when the section is on the move.*

SUPPLYING AMMUNITION FOR THE LMG

12. *Normally the gun team carries all its own ammunition. Where, according to the task and conditions, extra ammunition is required, it must be distributed among the rifle group beginning on a basis of two 30-round magazines per rifleman, excluding those who are carrying No. 94 grenades. When the section is together, the No. 2 will be responsible for collecting the magazines from the rifle group when required. When the gun is likely to be detached from the section, the section commander is responsible for giving orders as to the carriage of the extra ammunition.*

EXERCISING THE SECTION AS A TEAM

13. Act as section commander, get the section in extended line, show them the axis of advance and the "enemy", order "Advance", and then after a pause order "Down" and give a fire control order. Go on ordering "Stop" and "Go on" and giving fresh fire control orders for long enough to let No. 2 start his ammunition supply drill.

14. Jump up and check each man (see para 8); get the riflemen round the gun, and discuss the fire positions, actions, handling and fieldcraft of Nos. 1 and 2.

15. Give as many men as possible a chance to act as No. 1 or No. 2.

FIRE AND MANOEUVRE WITHIN THE SECTION

16. Explain.—*When the section is fired on and gets into fire positions to fire back, it is usually difficult to advance again without covering fire. The section is divided into LMG and rifle groups, so that either can give covering fire for the other. The section commander controls the movement of the section, and commands the rifle group. When the LMG group is to give covering fire, No. 1 must see that his position and his ammunition supply are such that he can produce accurate, sustained fire, which will keep the enemy's heads down while the rifle group advances.*

17. The groups really move by tactical bounds, as the men will learn when they practise section tactics. This lesson only deals very simply with the principle of fire and manoeuvre.

PRACTICE

18. Put the section in fire positions shooting at the enemy. Act as section commander, and order the LMG group to move to a position a few metres (rarely more than 20) to a flank to cover the advance of the rifle group; order the rifle group to fire to cover the move of the LMG group to its covering fire position. Watch the LMG group, and, when it has moved and is firing, order the rifle group to advance, let them go a few metres, stop the action, close the section on the LMG, and criticize and discuss the operation.

19. Give as many men as possible a chance to act as No. 1 or No. 2.

CONCLUSION

20. Questions from and to the squad.

21. Sum up.

LIVE FIRING 4.—CLOSE QUARTER BATTLE

AIM

1. To give men practice at firing the Bren at close quarters.

STORES

2. Guns, slings, magazines, holdalls, wallets, ammunition, figure targets.

NOTES

3. Repeat the firing as often as ammunition allows; but, except on the first occasion, leave out the teaching part (para 6).

4. If ammunition is not available, treat this simply as a lesson (first time only) and practice, and leave out the firing part (para 8).



Fig 24.—Close quarter battle—two firing positions

PRELIMINARIES

5. Safety precautions. Make the men prepare the guns for firing and fill their own magazines.

INSTRUCTION

6. Explain and demonstrate (*see Fig 24*).—*In the assault, in street fighting, in woods and so on, you can fight with a Bren at close quarters. Loosen the sling, and put it over either shoulder, press the butt into your right side with your right arm, and hold the folded bipod legs with your left hand. Only put the sling over your left shoulder for a long carry, because it takes longer to get the gun into action on the ground.*

PRACTICE

7. Make the men try out the position and practise carrying out the IA, without ammunition.

FIRING

8. Get each man to fire 20 rounds in bursts at figure targets at 25 yards/metres or less.

CONCLUSION

9. Questions from and to the squad.

10. Sum up.

CHAPTER 2.—EXTRA INFORMATION FOR INSTRUCTORS

INTRODUCTION

1. This chapter contains extra information for instructors, to help them to understand the subject more thoroughly, and make training more varied.

2. Do not teach it to recruits. You will find it useful, however, when you have to answer questions on things that the lessons do not cover; and it is suitable to teach to a NCOs cadre.

SECTION 1.—CHARACTERISTICS AND TECHNICAL DETAILS

1. The Bren LMG is gas operated, air cooled, magazine fed and shoulder controlled.

2. Stoppages are rare; nearly all of them are caused by damaged, dirty or badly filled magazines.

3. Details:—

Calibre	...	...	...	.303-inch (but <i>see</i> also Appendix B).
Weight	...	...	...	Marks 1 and 2, about 23 lb. Mark 3, about 19½ lb.
Length of gun	..	..	..	Marks 1 and 2, 45½ inches. Mark 3, 43 inches.
Length of barrel	.	.	.	Marks 1 and 2, 25 inches. Mark 3, 22 inches.
Cyclic rate of fire	...	...	...	450–550 rounds per minute.
Weight of tripod	...	...	...	26 lb.
Cooling	...	...	..	Direct contact with the air, and quick barrel changing.

SECTION 2.—PRACTICE PERIODS

1. All training must be progressive; unnecessary repetition is boring. A recruit learns skills and facts in the lessons, and he should be taught them once only during his service; he then needs much time and practice to speed up his actions, and get the facts firmly fixed in his mind.

2. During practice periods, it may be obvious that the men have failed to grasp a particular skill or fact, and you may have to teach them part of a lesson again.

3. The practices in this pamphlet are a guide to the best way of exercising recruits, but you must watch their weak points, and plan practices accordingly.

4. Spot and check faults immediately, or recruits will go on making mistakes, and make no progress; it is only if you correct them constantly that recruits get rid of faults in holding, aiming, firing and so on.

5. Put a practice into the programme whenever there is time, but keep varying the method.

SECTION 3.—ZEROING

General

1. The rules and conditions for zeroing LMGs are much the same as for zeroing rifles (see Infantry Training, Volume I, Pamphlet No. 3B, 1965 (Army Code No. 70179), Chapter 2, Section 6): this section deals only with those that are different.

2. The LMG is a section weapon, not a personal one; in a section, No. 1 zeroes it, and each member of the section must be allowed to try it out and make a note if he needs to alter the sights or his point of aim to hit his target; with recruits, an instructor does the zeroing. Remember that there are two barrels to zero.

3. Zero the gun from a tripod with its legs firmly bedded down. Fire two single rounds before firing the zero group. Aim and hold the gun in exactly the same way as when firing from the bipod. Fire a group of five single rounds, making sure that the aim is correct before each shot. Fire another group to test the zero after any alteration has been made to the sights.

4. The largest group that you may accept for zeroing purposes is an eight inch at 100 yards/metres, or a two inch at 25 yards/metres.

5. When you are satisfied that the gun has been zeroed right, make everyone who is going to use it to fire a group from the bipod and note where his MPI is: remember, each man must use the barrel that he is to fire with in future.

6. On active service check the zero of guns whenever you can; improvise targets, and if you cannot get hold of a tripod, get No. 1 to zero the gun from the bipod.

Zeroing data

7. This table provides the information that you need for zeroing:—

Mark of gun	Range in yards	Sights set at	Inches that the MPI should be above the point of aim	Permissible vertical error in inches	Inches (approximate) by which the MPI rises or drops when you fit the next smaller or larger foresight	Inches that the MPI moves sideways when you move the foresight one blade's width
1 and 2	100	200	5	2	3½	8
	25	200	1½	½	1	2
3	100	200	5	2	4½	10
	25	200	1½	½	1	2½

The sights are one inch to the left of, and parallel to, the barrel, and the MPI of a correctly zeroed gun is one inch to the right of the point of aim at any range.

8. Foresights available are .46, .43, .40, .37, .34, .31, .28, and .25. Use a hammer and drift to take out the foresight or move it across.

SECTION 4.—COACHING

1. The principles of coaching riflemen and Bren gunners are the same. This section deals with the extra things that LMG coaches need to understand.

2. The LMG differs from the rifle in these respects:—

- The bipod carries most of its weight and helps to steady it.
- The trigger has only one pressure, but there is some slack to take up first, which corresponds to the first pressure on a rifle.
- When fired in bursts, the gun vibrates.

Grouping

3. A man firing five single rounds without hurrying should be able to achieve a group as small as he can with a rifle. If he is firing single rounds at the rate of 28 or more in a minute, his group is likely to be at least half as large again; and if he is firing bursts, twice or even three times as large.

4. The largest acceptable burst group is 16 inches at 100 yards (4 inches at 25 yards), and an 8-inch (2-inch) group is the best you can reasonably expect.

25-yard/30-metre range

5. After being taught Lessons 1-4, a recruit is ready to fire bursts. The 25-yard/30-metre range is the best place for this, because the coach can see the order in which the shots arrive on the target, judge what the man is doing wrong, and advise him how to do better.

6. These are common faults that you can deduce from the target, and their causes:—

- (a) Each shot higher than the last—having the bipod vertical to start with, and pulling back the gun after starting to fire a burst.
- (b) Each shot lower than the last—having the bipod vertical to start with, and pushing the shoulder forward after starting to fire a burst.
- (c) Scattered shots—loose holding.
- (d) First shot accurate, and the rest in a group somewhere else—suddenly tightening the grip when the first shot moves the gun off aim.
- (e) Each shot to the right of the last—the left hand producing the “master” grip.

7. These are things that you can make certain on the 25-yard/30-metre range that a recruit knows:—

- (a) How to take a correct aim. Some men do not get the foresight in the middle of the large aperture; some may even use the foresight protector as the foresight. Aiming a LMG needs even more care and concentration than aiming a rifle.
- (b) How long to keep the trigger pressed to fire a burst of any particular number of rounds.
- (c) How to hold the gun firmly and control its vibration when firing bursts. A compact group means that a man is holding well; if the group is bad, work out why, and try to convince the man of what he is doing wrong.

Hints for coaches

8. Remember that the gun cannot be zeroed to suit each man; be prepared to advise a man to alter his sights or point of aim, rather than assume that he is aiming wrong.

9. If a gun has a worn barrel, it may start to shoot low. A gun with a loose fitting barrel scatters its shots; an armourer can put it right temporarily, but it will gradually get loose again.

10. Most men need to set their sights about 50 yards/metres higher for bursts than for single shots, until they are well practised and do not push against the gun as it starts to fire.

11. Make sure that the bipod is absolutely square to the target; otherwise the gun is not central in the bipod sleeve, and tends to move to the centre when the gun vibrates; this is a common cause of scattered shooting.

12. See that the firer pushes his shoulder forward on to the butt, and then pulls the butt back to lock it.

13. If the left elbow is in front of the left hand, you do not push the right shoulder forward as you fire.

14. If the right hand produces the “master” grip, you check any tendency to pull the butt to the left with your left hand, and so make your shots go to the right.

15. You have the best chance of pressing the trigger without disturbing your aim if the web between your right thumb and forefinger is high up the pistol grip and right behind it, your forefinger is on the very bottom of the trigger, and you press straight back with your finger.

16. The left hand should be as far forward on the small of the butt as is comfortable.

17. The way you lock your hold is to turn your wrists towards each other as far as you can without shifting your grip.

18. It is important to rest your head on your left hand or the butt in exactly the same place each time.

19. A firer and his gun are steadier if his body and legs are straight behind it; and it is better for the legs to be to the right than to the left.

20. Parts of the firing point may be so steep that the bipod is too high even without the legs extended; the remedy is to move your position; perhaps so that the bipod is just over the forward edge.

21. Try to make men keep their right eyes open throughout a burst; many of them shut them as they fire. With your eye open you can watch how the foresight moves about the aiming mark, and you should be able to declare how your burst has gone.

22. See that the gas regulator is set at the smallest hole at which the guns works reliably; if the gun is firing faster than it needs, you cannot control it.

23. If you get a man to fire a few “dry” shots, before he loads and fires, you can spot errors of holdings that might spoil his shooting, and correct them.

24. It is a help if the markers on the open range point to each shot of a burst, in the order in which they arrived, and you can see better where they are pointing if you use binoculars; on a 25-yard/30-metre range use binoculars to see in what order the shots arrive, if you can.

25. Remember that your primary aim is to improve a man's grouping capacity, and the only way to do it is to keep on correcting his faults.

26. Men should always have the same coach, if possible; and every group must be recorded.

SECTION 5.—FIXED LINES

1. The closer fixed line fire goes to the forward defended localities the more effective it is; but remember the 100-mil or 350-mil limit.

2. Do not lay a fixed line on a target more than 600 metres away, and try to site guns low and to fire over flat ground; if you obey those rules, you get the longest possible dangerous zone, because at 600 metres bullets rise not more than four and a half feet above the line of sight.

3. Try to have any fixed line gun defiladed from the front, and protected by a forward section.

4. The purpose of fixed line guns is to produce defensive fire (DF), which is effective only if it can be produced immediately. Section commanders with fixed line guns must know:—

- (a) The signal for defensive fire.
- (b) How much ammunition to keep for the purpose.
- (c) When to mount the gun on the tripod.
- (d) The rate of fire, which the platoon commander will have ordered.

They must also post a sentry on the gun whenever defensive fire may be wanted, with orders to fire (and what to fire) the moment he gets the signal.

5. The battalion commander co-ordinates fixed lines throughout a defensive position in his fire plan.

SECTION 6.—FURTHER STRIPPING

1. To deal with broken parts, or to clean more thoroughly, you may have to strip parts of the gun not taught in Chapter 1. When you put them back again, always test them to see that they work properly.

STRIPPING AND ASSEMBLING

2. **Mark 1 magazines.**—To strip one, press in the stud on the bottom plate, slide the plate off, and control the spring as it comes out. To put it together, put back the platform and spring, compress the spring, and slide on the bottom plate until the stud engages; tap the edge of the magazine to help it engage.

3. **Mark 2 magazines.**—To strip one, press in the stud on the bottom plate, draw the plate back a bit, and lift it off sideways; take out the spring and platform. To put it together, put back the platform and spring; fit the two half moon projections to the flange on one side of the magazine; press down the plate to engage the flange on the other side; and slide it forward until the stud engages.

4. **Return spring and rod (Mark 2 butt).**—To strip it, cock the gun and press the trigger; take out the large screw in the middle of the butt plate with the combination tool, control the spring and take out the cap, spring and rod. To put it together, reverse the process. If the butt comes away from the butt slide, put it back, and make certain that the spring clip inside the butt engages outside the return spring housing.

5. **Return spring and rod (Mark 1 butt):—**

- (a) To strip it, cock the gun and press the trigger; put the nose of a bullet on the butt plate catch and tap the base of the round with your hand, and take off the butt plate; fit the combination tool over the return spring cap, press it in and turn the tool a quarter turn to the left, control the spring, and take out the cap, spring and rod.
- (b) To put it together, reverse the process; but fit the stud on the toe of the butt plate into the recess in the toe of the butt, push down the catch with the nose of a bullet, and lift the butt plate firmly upwards and forwards until it engages with the catch.

6. **Magazine catch and ejector.**—To strip it:—

- (a) Cock the gun; press the point of the magazine catch pin, and pull the pin out.
- (b) Slide the catch and ejector forward, and take them out.
- (c) Squeeze the catch and spring together, slide the catch back along the ejector, and take them apart.
- (d) Slide the magazine opening cover to the rear and take it off. To put them together, reverse the process.

7. **The trigger group (see Fig 25):—**

- (a) To strip it, use the nose of a bullet to take out all pins from right to left; put the change lever at safe, and push it out; press out the sear pin, and take out the sear and spring; lift the tripping lever, push out the trigger pin, and take out the trigger and tripping lever.
- (b) To put it together, hold the tripping lever upright to keep the trigger in position, and put back the trigger pin; put the sear and spring in place with the end of the tripping lever through the slot in the sear; put back the sear pin and see that the plunger engages in the trigger pin; hold the tripping lever down a little, and push in the change lever.

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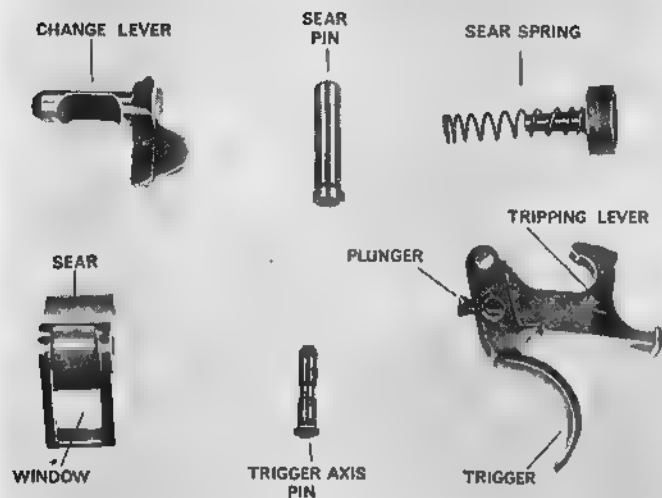


Fig 25.—The trigger group

SECTION 7.—MECHANISM

The trigger group

1. **General.**—The change lever has a deep and a shallow bevel in its stem; as you move the change lever, you alter the position of the tripping lever, and so control the tripping action (see Fig 26).

2. **Automatic.**—When the change lever is at "A" (see Fig 27):—

- (a) The full diameter of its stem holds the tripping lever down so that, when you press the trigger, the lower hook on the tripping lever tail engages in the lower edge of the window of the sear, turns the sear, frees its nose from the bent in the piston, and compresses its spring. The tripping lever holds the sear like that as long as the trigger is pressed.

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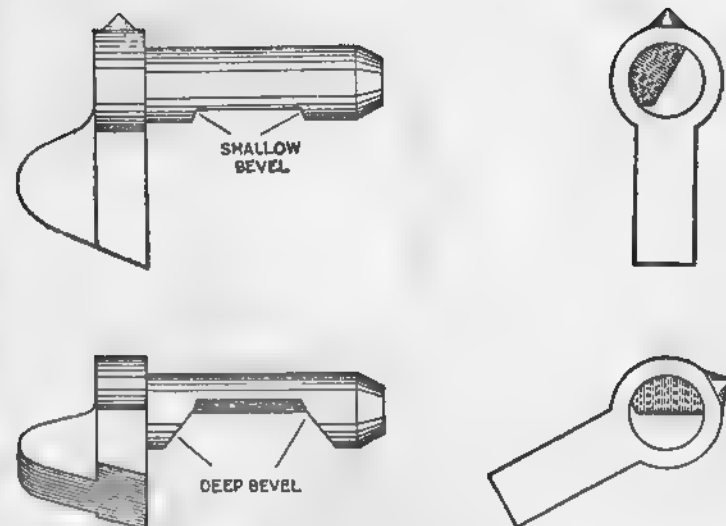


Fig 26.—The change lever

- (b) When you release the trigger, the plunger and spring, which are housed in the tripping lever, push the trigger and the tripping lever back to their normal positions; and its own spring pushes up the sear until it engages in the bent of the piston and stops the piston from going forward.

3. **Single rounds.**—When the change lever is at "R" (see Fig 28):—

- (a) The deep bevel in its stem allows the tripping lever to rise until, when you press the trigger, the upper hook on the tripping lever tail engages in the upper edge of the window of the sear, turns the sear, forces its nose out of the bent in the piston, and compresses its spring.
- (b) As the piston goes forward, the bottom of the bent hits the top of the tripping lever and pulls the hook of the tripping lever away from the window of the sear, the sear spring immediately pushes the sear up, and it is ready to engage in the bent in the piston as it goes forward again.

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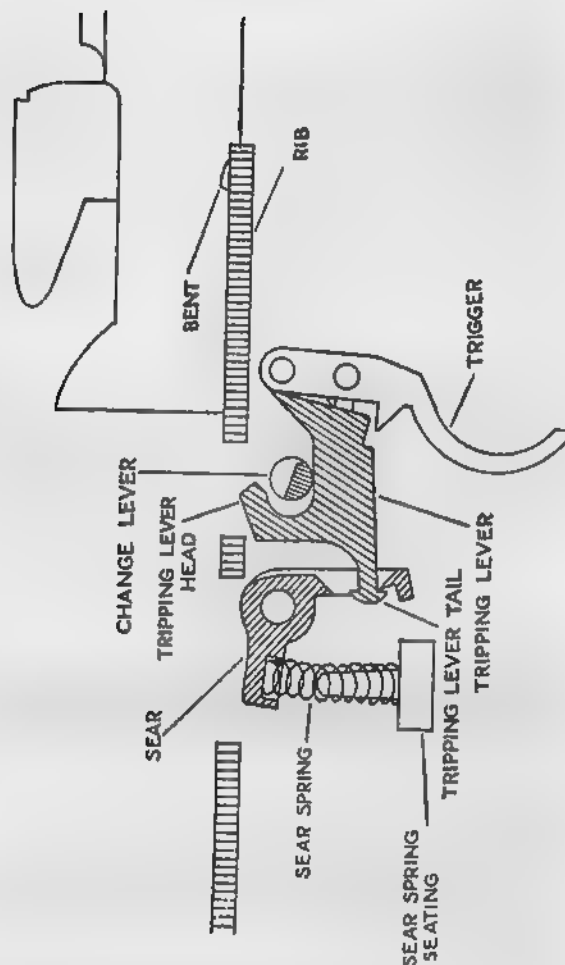


Fig 27.—The trigger pressed with the change lever at "A"

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- (c) As the piston comes back, it goes over the sear and pushes it down; as the piston goes forward again, the sear comes up again and engages in the bent; a projection under the piston holds the tripping lever down and stops it from engaging the sear.
- (d) When you release the trigger, the plunger and spring force back the tripping lever, and the top hook engages the upper edge of the window of the sear again, ready for the next shot.

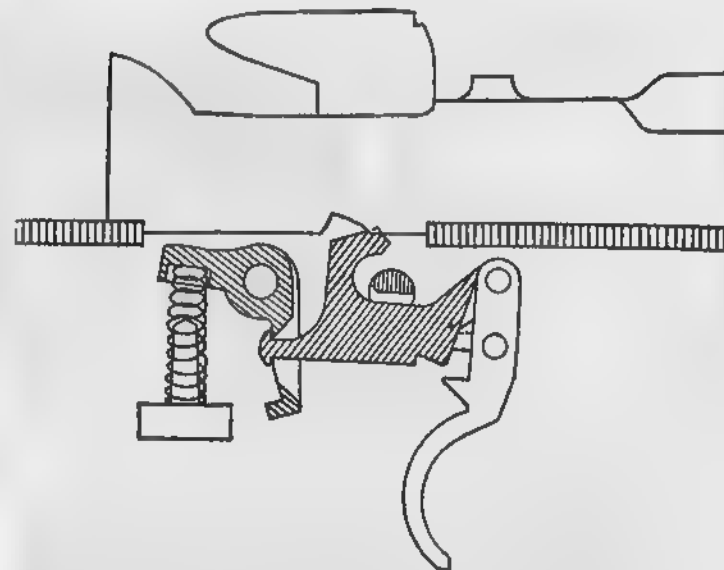


Fig 28.—The trigger pressed with the change lever at "R"

4. Applied safety:—

- (a) When the change lever is at "S", the shallow bevel in its stem allows the tripping lever to rise high enough to stop either of its hooks from touching the sear when you press the trigger (see Fig 29).

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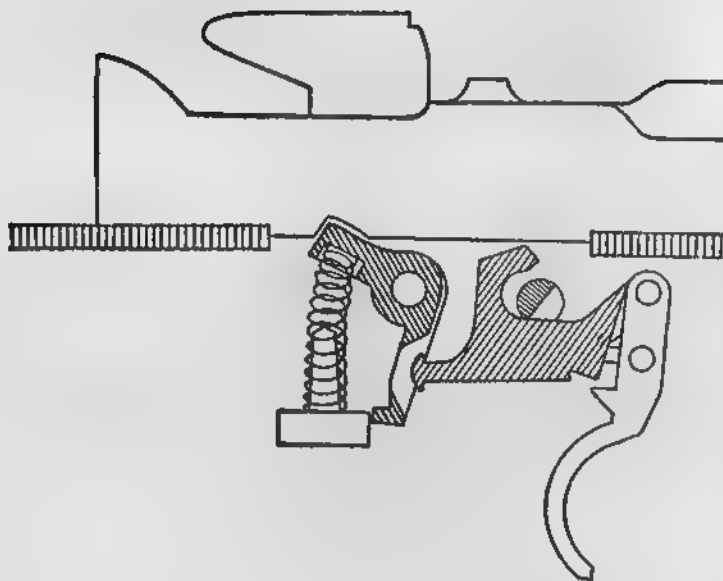


Fig 29.—The trigger pressed with the change lever at "S"

- (b) If you move the change lever from "S" to "A" while the trigger is still pressed, its stem presses down the tail of the tripping lever; when you release the trigger, the lower hook cannot engage in the window of the sear, nor move the sear when you press the trigger again (see Fig 30); but if you then release the trigger, and move the change lever back to "S", the tripping lever can rise, and the plunger and spring push it back until it engages in the window of the sear.

Mechanical safety

5. Mechanical safety is the device which makes it impossible to fire a round until the breech is locked, and keeps it locked until gas pressure has dropped in the chamber.

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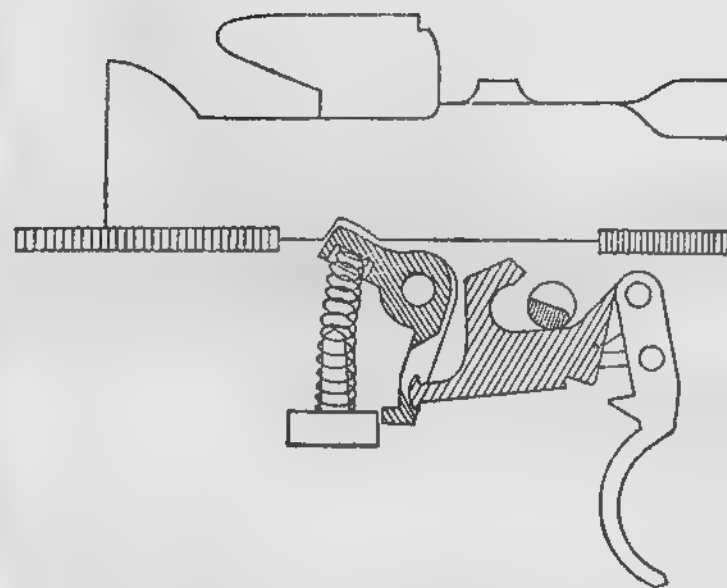


Fig 30.—The trigger released, after the change lever has been moved from "S" to "A" with the trigger pressed

6. As the piston goes forward, the rounded shoulder at its back lifts the back of the breech block, and pushes the locking lug up into the locking recess in the body; this locks the breech and gets the round properly into the chamber, before the piston post strikes the firing pin and fires the round (see Fig 31).

7. As soon as the piston post starts to move back, the firing pin spring pulls the pin away from the base of the cartridge; the piston goes on back; the projection on the back of it catches the hollow end of the breech block, presses the back of it down, and brings the locking lug down out of the locking recess. All that takes long enough for gas pressure to drop in the chamber before the breech block can start to move back (see Fig 32).

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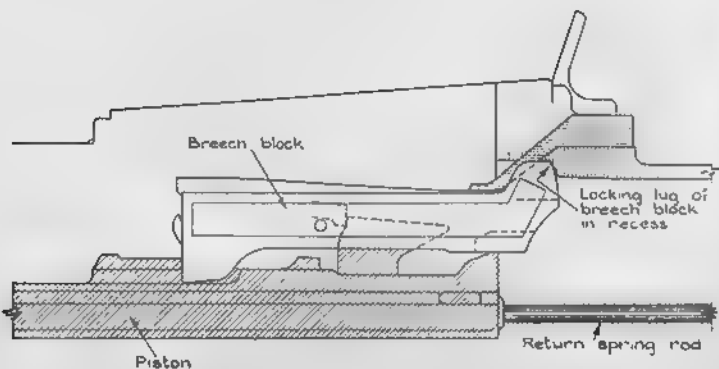


Fig 31.—The mechanism locked

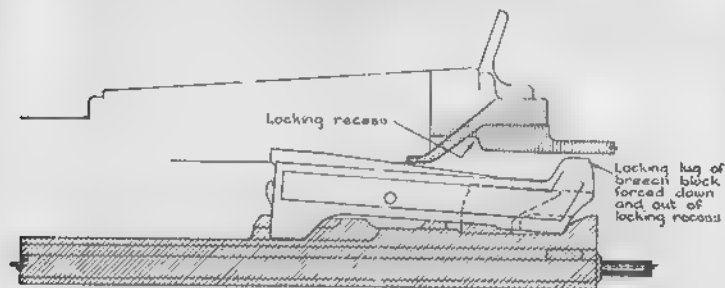


Fig 32.—The mechanism unlocked

Empty magazine (see Fig 33)

8. The projections on the back of the magazine platform are nearly half an inch behind the base of the rounds in the magazine. When the magazine is empty, the feedpiece on the breech block meets the back of the platform and the action cannot go forward.

9. If you take your finger off the trigger, and take off the magazine, the piston and breech block go forward a short way until the bent on the piston

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meets the sear; the action is then cocked ready for you to put another magazine on the gun and go on firing.

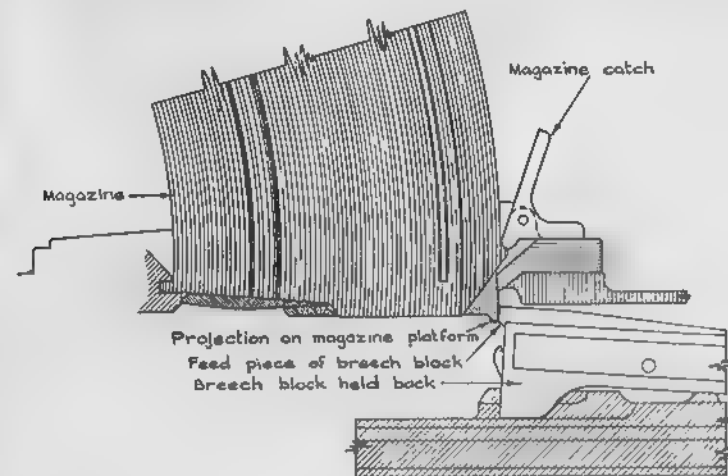


Fig 33.—The effect of an empty magazine

SECTION 8.—DIFFERENCES BETWEEN MARKS OF GUNS

1. Mark 1.—This was the original British version of the ZGB Czech gun, and was beautifully designed and produced. Most Mark 1 guns are now DP.

2. Mark 2.—To make the guns simpler to produce, these changes were made to the Mark 1:—

- (a) The combined barrel sleeve and flash hider, the butt strap and the butt handle were dropped.
- (b) A solid cocking handle replaced the folding one.
- (c) A simpler bipod was fitted, which cannot be adjusted.
- (d) Many cuts designed to lighten the gun were left out.
- (e) The safety lug was taken off the barrel nut.
- (f) A leaf backsight was fitted instead of the drum type.

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3. **Mark 3.**—It is a lighter version of the Mark 2, and almost as accurate. It is about three inches shorter and between three and four pounds lighter; the lighter barrel means that it is not capable of giving so much sustained fire. It has the old type of bipod, with adjustable legs.

SECTION 9.—WATERPROOFING

1. If you take a gun through heavy surf on a sandy beach, it is likely to fail unless you make some attempt to waterproof it.

2. If the gun will not be required within 30 seconds of landing:—

- (a) Prepare it for firing, but set the gas regulator at No. 4 hole.
- (b) Seal all gas escape holes with adhesive tape, and plug the muzzle with flannelette.
- (c) Close the magazine and ejection opening covers, and bind six or seven yards of flannelette round the gun from locking pin to gas block inclusive, to filter sand out of any water that gets at the gun; leave the carrying handle free and the bipod legs down.
- (d) When you land, throw away the flannelette plug and binding, and the adhesive tape, press the trigger and keep it pressed, and move the action to and fro sharply at least six times; then load, and carry on.

3. Wrap magazines in flannelette; pay special attention to the mouth. Empty them as soon as possible after landing, and clean them and the ammunition.

4. If the gun must be immediately available to fire, dry off all oil, seal all openings with Cooper's Grease No. 4, and plug the muzzle with flannelette tied to the foresight; dry magazines thoroughly, and clean them and the ammunition in them at the first opportunity.

SECTION 10.—THE PRINCIPLES OF SMALL ARMS AA FIRE

1. This section amplifies Lesson 9; before you read it, read through Lesson 9 again.

Policy

2. The decision on general policy as to whether or not to engage enemy aircraft with small arms fire is the responsibility of the theatre commander; troops well dug in and well concealed are difficult to see from the air, and LMGs may give away the position if they open fire. If the orders are to open fire, the following policy will apply:—

- (a) Although a modern aircraft will rarely be brought down by small arms fire, it may be damaged so that it crashes on its return to base, or is grounded for several days for repair.
- (b) Accurate small arms fire can upset a pilot's aim and acts as a deterrent to low flying attacks. Fire must be strictly controlled however, to safeguard friendly aircraft and to prevent men from exposing themselves and thereby disclosing their positions.

(c) In order to ensure that the necessary standard of fire discipline is maintained, units will therefore form special AA teams from certain of their LMG numbers. These teams only will engage hostile aircraft.

(d) Fire will only be opened by unit AA teams in the following circumstances:—

- (i) If the aircraft is seen to attack a ground target.
- (ii) If the aircraft dives on to an objective; this does not apply to light aircraft or helicopters which will NOT be engaged by small arms fire.
- (iii) If the aircraft is recognized by the firer as an enemy.

(e) Special care must be taken not to fire at friendly light aircraft and helicopters, which are liable to fly anywhere in a battle area. Aircraft must therefore be identified before fire is opened, since friendly light aircraft, for example, may dive suddenly in order to take evasive action, and be thereby mistaken for an enemy aircraft diving on to an objective.

When light aircraft are not recognized, but are suspected of being enemy, LMG AA gunners and air sentries must report the presence of such aircraft to their immediate superior. Units will report to higher formations using a suitably modified version of the BOMREP code.

3. On the move in MT:—

- (a) As many vehicles as possible should have one or more AA LMGs ready for action. Air sentries must be alert, and guns along the column trained in different directions so that some of them can meet an attack from any direction. Canopies and superstructures must be so adjusted that the guns are instantly free to shoot.
- (b) If aircraft attack the column, guns must open fire at once.
- (c) A column must not halt except on the column commander's orders; if it halts for any other reason, column and vehicle commanders must do all they can to get it moving again.
- (d) If a halt is ordered, or if for any reason the column halts and seems unlikely to get going again quickly, everyone must debus at once, and disperse clear of the road; and AA LMGs should engage suitable enemy aircraft.

4. When concealment is not so important, for instance in camps or bivouacs whose locations the enemy knows, AA LMGs should fire at suitable enemy aircraft unless specially ordered not to.

5. Collectively controlled rifle fire can be an effective deterrent against low-flying aircraft (see Infantry Training, Volume I, Pamphlet No. 3B. The 7-62-mm Self Loading Rifle and Bayonet (All Arms), 1965, Army Code No. 70179, Appendix D).

6. Troops dispersed and well concealed are very difficult to spot from the air; and dispersal and concealment are the best defence against low flying attack.

AA magazines

7. The reason for loading five rounds of ball into AA magazines is that they are the last to be fired and help to clear tracer fouling from the barrel.

Training

8. In infantry units everyone must be taught AA fire discipline; in other units two men for each LMG, and adequate reserves, must be trained.

9. Aircraft are likely to attack fast and suddenly; you may not even hear them until they are on you, and there will be no time for anyone to give orders; this means that:—

(a) You must train your men:—

- (i) Not to be demoralized by the speed, noise and hitting power of modern aircraft, nor to expect to hear them before an attack actually starts.
- (ii) To act as AA sentries as well as gunners, and to fire without orders.
- (iii) To a high standard of handling and fire discipline, so that they only open fire when they should, and do not endanger friendly troops.
- (iv) Not to expect to see results from their fire; but to remember that bullets may hit vital parts, and bring aircraft down out of sight, or ground them for repairs.
- (v) To watch and listen for aircraft, and to judge what lines of approach they may use to gain surprise; for instance, out of the sun or cloud, or over low hills or woods.
- (vi) To work in pairs. Give them constant practice at handling particularly against jet fighters when you can.

(b) You must choose the quickest witted and steadiest men as AA LM gunners.

(c) Units must have, and constantly practise, a sound drill for:—

- (i) Debussing, dispersing and embussing.
- (ii) Having AA magazines available when they are wanted.
- (iii) Co-ordinating AA LMG fire, to save confusion or endangering friendly troops.

(d) You must introduce AA defence into all training, so that in war it is instinctive; and always discuss it after any exercise.

10. The training syllabus should include:—

- (a) The general principles of offensive action by AA LMGs.
- (b) Aircraft recognition.
- (c) Lesson 9, and progressive practice in the open, in slit trenches, and from stationary and moving vehicles.
- (d) Live firing first against a stop butt, to get men used to firing a whole magazine in one burst (you can use ball ammunition for this), then as explained in Live Firing 3.
- (e) AA fire discipline training at every possible chance, especially on collective training.

Training must be continuous and progressive.

SECTION 11.—TRAINING TESTS

AIM

1. To find out what standard of training men have reached.

DRESS

2. Battle order.

NOTES

3. Grade men as follows:—

Skilled	—	90–100 marks
Above average	—	80–89 marks
Average	—	60–79 marks
Below average	—	50–59 marks
Failed	—	Less than 50 marks.

4. Recruits should achieve at least “average” at the end of their basic training; trained men who cannot do better than “average” need more instruction. When a man is transferred, always tell his new unit his grading. Test recruits half way through their basic training too, to see how they are getting on.

5. Let the men practise the tests before doing them, and use the tests as competitions in practice periods.

6. Before testing a man, explain the test to him, and let him ask questions if he does not understand, once the test begins, do not help him any more. Always tell him the result of the test, and where he went wrong.

7. Appendix A gives the ^{tests} in detail.

TRAINING TESTS

Test No. (a)	Subject (b)	Stores (c)	Conditions (d)	Marking (e)
1	Magazine filling	Magazine. Drill cartridges (loose). Watch.	On the command "Go" the man fills a magazine with 28 rounds. Take the time from "Go" until the last round is in the magazine. Allow the man two tries. Give no marks unless the magazine is filled correctly.	32 seconds — 10 35 seconds — 8 40 seconds — 6 45 seconds — 4 Over 45 seconds — NIL
2	Loading	Gun and magazine. Wallet. Utility pouches. Watch.	The man starts standing behind his gun, with a magazine in a utility pouch by the gun, and the change lever at "A". On the command "Load", he lies down and loads. Take the time from "Load" until he has both hands back in their proper positions on the gun.	6 seconds — 10 7 seconds — 8 9 seconds — 6 11 seconds — 4 Over 11 seconds — NIL Take off one mark for every mistake.

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Test No. (a)	Subject (b)	Stores (c)	Conditions (d)	Marking (e)
3	Unloading	As for Test No. 2	First order a range and then "Unload". On the command "Unload", the man unloads, stands up and reports "Gun clear". Take the time from "Unload" until he is standing up.	10 seconds — 10 11 seconds — 8 14 seconds — 6 17 seconds — 4 Over 17 seconds — NIL Take off one mark for every mistake.
4	LA	Gun. Magazines. Utility pouches. Watch. Suitable targets. Drill cartridges.	Give a fire order, and then "Gun stops". Take the time from "Gun stops" until the man has aimed again and fired.	6 seconds — 10 7 seconds — 8 9 seconds — 6 11 seconds — 4 Over 11 seconds — NIL Take off one mark for every mistake.
5	Gas stoppage	As for Test No. 4	Give a fire order, and then "Gun stops", when the man has completed the LA, order "Gun fires one or two rounds, and stops again". Take the time from "again" until the man has aimed again and fired.	15 seconds — 10 18 seconds — 8 22 seconds — 6 26 seconds — 4 Over 26 seconds — NIL Take off one mark for every mistake.

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Test No. (a)	Subject (b)	Stores (c)	Conditions (d)	Marking (e)
6	Stripping and assembling	As for Test No. 2 but no watch.	The man strips the gun, which should be loaded before the start of the test, and puts it together again, as taught in Lessons 1 and 4.	Give ten marks, and take off one for each mistake: if a mistake involves safety, give nil marks.
7	Changing barrel by No. 2	As for Test No. 4	Start with No. 1 in a firing position, with the gun cocked and an empty magazine on; and with No. 2 beside the gun with a spare barrel and a full magazine. Order "Magazine empty"; No. 1 cocks the gun, takes off the magazine, closes the magazine opening cover, and calls "Barrel"; No. 2 changes the barrel and puts on a full magazine. Take the time from "Barrel" until the full magazine is on the gun.	8 seconds — 10 10 seconds — 8 14 seconds — 6 18 seconds — 4 Over 18 seconds — NIL Take off one mark for every mistake that No. 2 makes.
8	Handling	Gun. Sling. Magazines. Wallet. Utility pouches. Drill cartridges.	Start with the gun loaded. Order "Advance", and order the man to occupy a position behind cover; then order "Prepare to advance—advance".	Retest No. 2 if he fails as a result of the slowness of No. 1. Give ten marks; take off two marks for any mistake which would make fire inaccurate or the gun dangerous (in making safe, for instance); and one mark for any other mistake.

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Test No. (a)	Subject (b)	Stores (c)	Conditions (d)	Marking (e)
9	Grouping—single rounds	As for Test No. 2. Ammunition. Range stores.	The man fires two five-round, single shot groups at 100 yards/metres (or 25 yards/metres). Take the best group.	4-inch (1-inch) — 10 8-inch (2-inch) — 8 12-inch (3-inch) — 6 12-inch (3-inch) and one wide — 2
10	Grouping—bursts	As for Test No. 9	The man fires two five-round groups in bursts at 100 yards/metres (or 25 yards/metres). Take the best group.	8-inch (2-inch) — 10 16-inch (4-inch) — 8 24-inch (6-inch) — 6 24-inch (6-inch) and one wide — 2

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Appendix B

THE 7-62-mm CONVERTED BREN LMG

Introduction

1. The 7-62-mm Converted Bren LMG is the normal .303-inch Bren modified to fire the standardized 7-62-mm NATO round. For all practical purposes it is handled and fired in the same way as the .303-inch Bren LMG. Its weight is about 20 lb.

Recognition

2. The 7-62-mm Converted Bren can be distinguished from the .303-inch by a red patch on the barrel and body on which is clearly marked 7-62-mm in black. No attempt must be made to fire .303-inch rounds.

Modifications

3. Modifications are as follows:—

- (a) A new design of barrel to take the 7-62-mm round.
- (b) A new design of flash hider.
- (c) A modification of the magazine catch to accommodate the 20-round and 30-round magazines.
- (d) A newly designed 30-round magazine, interchangeable with the 20-round magazine of the 7-62-mm self loading rifle.
- (e) A new breech block complete to take the rimless 7-62-mm round.
- (f) A backsight graduated in metres.

4. Details of main modifications.

- (a) *Barrel.* The barrel is a new component; it is bored and chambered to take the 7-62-mm cartridge. The rifling is of the continental type with four grooves, right hand twist, one turn in twelve inches. The length of the barrel is two inches longer than that for the Mk 3 .303-inch gun.
- (b) *Flash hider.* The flash hider is of the cylindrical type with apertures running lengthwise. It carries the foresight block and is secured by a pin fitted transversely.
- (c) *Gas block.* The gas block is fitted in the same relative position as that of the .303-inch barrels, and the ports in it and the regulator are the same.
- (d) *Gas regulation.* The 7-62-mm cartridge is more powerful than the .303-inch. When firing with a new gun, the gas regulator should be set at No. 1 port; a larger sized port should only be used if the gun fails to function satisfactorily on No. 1.

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(e) Magazines

- (i) The magazine holds 30 rounds; filling and emptying is as for magazines of the self loading rifle. It must never be filled with more than 30 rounds, otherwise stoppages will occur.
- (ii) The use of the 20-round self loading rifle magazine on the 7-62-mm converted Bren LMG is restricted to emergency firing on active service only, on account of the damage to magazines and stoppages which will result. In no circumstances will these magazines be used on the LMG during training.

Zeroing

5.

Range in metres	Sights set at metres	Position of MPI	Permissible vertical error in inches	Vertical rise or drop in MPI on one change of foresight	Lateral movement of MPI on one width of foresight
100	200	1½" above the point of aim and 1" right	2"	3½"	8"
25	200	1" right of the point of aim	½"	1"	2"

Size and number of foresights is as for the .303-inch Bren LMG.

Some guns may be issued with the .303-inch backsight marked with .303-inch ammunition calibrations. Such guns will be zeroed as above, but will shoot high at the longer ranges. As a guide, correctly zeroed guns should require 100 metres less elevation at ranges of 400 metres and above.

6. The new items of cleaning stores and the method of using them will be found in the appropriate lessons.

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Appendix C

THE 7-62-mm CONVERTED BREN LMG BLANK FIRING
ATTACHMENT

Description and fitting

1. The blank firing attachment consists of a steel spigot which is secured to a metal framework. The framework is coloured bright yellow. To fit the attachment, unscrew the wing nut and open the clamping jaws, insert the spigot into the flash hider, close the clamping jaws behind the foresight block, and tighten the wing nut. To remove the attachment, unscrew the wing nut, swing open the clamping jaws and remove from the flash hider.

Use

2. (a) Great care must be taken to ensure that only blank ammunition is used with this attachment.
- (b) No alteration to the setting of the gas regulator is necessary: the spigot traps sufficient gas to operate the mechanism.

Safety precautions

3. A danger area of 30 metres exists immediately to the front of the weapon when using this attachment. The LMG will never be pointed directly at a person within this range. Before use, the attachment will be inspected by a NCO to ensure that it is securely fixed to the weapon.

Cleaning

4. (a) Before firing, the blank attachment should be thoroughly dry.
- (b) The LMG is prepared for firing in the normal way.
- (c) After firing, all gas affected parts of the LMG and blank firing attachment should be thoroughly soaked in oil, allowed to stand for several minutes, and finally cleaned and oiled.

Note:—The user must not attempt to dismantle the blank firing attachment; any necessary repairs must be carried out by a qualified armourer.

5. The blank firing attachment is to be used only in conjunction with blank ammunition which is the same shape and length as ball ammunition. An additional feature which assists recognition is that the nose of the blank round is crimped. These factors must be emphasized constantly by the instructor, section and platoon NCOs, and platoon commanders whenever blank ammunition is used. Every effort must be made to allow the soldier to see and feel the blank round in relation to the live round.

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Appendix D

BLANK FIRING BARRELS CONVERSION

1. It is probable that the manufacture of the existing blank firing attachment, as described in Appendix C, may cease.

2. As an alternative, the conversion of unserviceable barrels of all marks of the 7-62-mm MG L4 for blank firing has been authorized. This conversion may be used when the existing blank firing attachment is not available.

3. This conversion consists of a bolt fitted through the end of the barrel to form a choke. After conversion the barrel is to be stamped "FOR 7-62-MM BLANK ONLY" and the end of the barrel is to be painted yellow. EMER Small Arms and Machine Guns E 567 Modification Instruction No. 8 refers.

4. When using this conversion, the safety precautions laid down in Appendix C are to be applied.

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If on active service it is necessary to destroy surplus weapons so that they become unusable by an enemy, the following actions will prove effective:—

- (a) Plug the barrel near the chamber or bury the muzzle in the ground; load, and fire by remote control from behind cover.
- (b) Strip, as far as possible; bury and/or scatter remaining parts over a wide area.
- (c) Retain essential parts of the mechanism that remain, such as usable firing pins, etc.
- (d) Do not neglect the disposal of spare parts.

Should the foregoing destruction drill not be possible, other methods must be devised, eg, destroying by explosive charges or by fire; running over by vehicles; scattering components in rivers and undergrowth. Unfired ammunition can be destroyed by explosives using improvised demolition charges made up with grenades, bombs, etc.